The effective use of competition as a pedagogical tool to develop competence, confidence and enjoyment in physical education lessons in primary schools.

by

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Abstract

Competition sits prominently within the National Curriculum for Physical Education (PE) (DfE, 2013) yet there is little guidance for teachers in how competition should be delivered. Additionally, much of the current research in this field focusses on competitive sport that takes place outside of curriculum time and considers the attitudes of older children. This thesis seeks to address some of these gaps in research by focussing on competition delivered within primary school PE lessons.

Howells et al. (2018) propose a Model for Effective Learning in Competition (MELC) that explores the relationship between the level of challenge within an activity and the level of success achieved, suggesting that there is a 'Competition Learning Zone' (CLZ) when these two are in equity. Additionally, Howells et al. (2018) consider three different 'types' of competition and how each can foster learning. This thesis investigates the application of the MELC and CLZ to develop competence, confidence and enjoyment in primary PE during the three different types of competition within two primary schools in the South East of England across two different age phases.

The findings support the ideas presented by Howells et al. (2018) with a higher percentage of children improving in confidence and competence when competitive targets were introduced, regardless of age or gender. Additionally, when competition was absent children's scores regressed at a higher rate. Children responded far more positively in terms of enjoyment when targets were low or mid-level whereas high targets had less impact on improvement, although they did lower confidence, particularly amongst girls. Moreover, the children expressed a preference for competing *against* others, whereas they produced their best results when competing *alongside* others, which interestingly was the format of competition that they enjoyed the *least*.

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CHAPTER ONE: Introduction

> 'Given the privileged and dominant position competition holds in physical education curricula, it is concerning that competitive physical education remains steeped in traditional pedagogies and that these pedagogies are constrained by teachers' everyday philosophies rather than any explicit understanding of pedagogy or the needs of pupils'
>
> (Harvey and O'Donovan, 2013, p.767).

Despite significantly increased government investment in primary PE and school sport (via the Primary PE and School Sport funding, (DfE,2019)), and the development of national programmes committed to competition (YST, 2018), how competition is used and applied in school settings remains a contentious issue. This thesis will seek to explore how teachers might consider adapting the 'traditional pedagogies' that Harvey and O'Donovan (2013) refer to (p.767), by evaluating the practical application of ideas and strategies proposed by Howells et al. (2018) who suggest that, if effectively used, competition can be a catalyst to increase competence, confidence and enjoyment in PE.

1.1 Researcher Background

I have never considered myself to be, a particularly competitive individual. I am not the kind of person who has to 'win' when I find myself in competitive situations, nor do I feel compelled to commit to intense coaching and training schedules in order to squeeze out every ounce of ability within me when learning new skills or attempting new sports in order to be the best. I simply like to be active; I enjoy taking part and I would certainly consider myself to be 'physically literate' (Whitehead, 2010).

However, as I reflect on my many and varied, sporting and physical activity experiences over many years, be it as a pupil, performer, coach, PE teacher or events coordinator, it became clear that competition has in fact been a fundamental cornerstone of my own personal growth and development towards physical literacy. (Indeed, perhaps my own ambivalence towards being overly 'competitive'

has developed from a lifetime of competing with a twin brother who always seemed to do better than me!) Competition has always provided a purpose for trying to improve. Competition has provided the goals and aspirations that have taught me discipline and the importance of hard work and commitment, and competition has taught me to respect and value the contribution of others, to learn to cope with success and disappointments. Laker (2001) concurs with these views, also suggesting that PE lessons are the ideal environment for children to develop these valuable qualities.

Competition has also played a significant role throughout my career in PE and school sport. As a secondary PE teacher, I was always motivated to deliver lessons that were as engaging as they were active, but also constantly challenged pupils to develop and improve. I always felt that too many teachers, (particularly when working with groups of adolescent boys), settled for high activity levels by simply playing 'games' in lessons dominated by traditional team sports. In such situations, the most-able players dominated the activities; it was easy to understand why there are so many negative perceptions of the use of competition. However, with some simple strategies to differentiate groups, tasks and outcomes I found that even those who were normally less engaged by PE, when challenged appropriately, and where they had the opportunity to 'feel' successful, became more involved in lessons. Effective use of competition *could* make a positive impact on *all* pupils, if managed and delivered correctly.

Later in my career, as the Senior Competition Manager for Kent (2007-2010) I had a fundamental role in developing the Kent School Games, one of nine 'pilots' commissioned by the Youth Sport Trust (YST) prior to the introduction of the School Games Programme nationally in 2010. As we developed this annual multi-sport competitive festival, serving as the culmination of a yearlong series of local tournaments for both primary and secondary aged children, I was able to witness how 'participation in competitive activities provides the opportunity to develop skills in the pursuit of excellence' (Drewe, 1998, p.5).

Subsequently, as the Senior School Games Organiser (SGO) for Kent (2010-2014), I was charged with a developing a far broader programme of events that fed into a national network of four tiers of competition. These tiers created a pathway for children to experience competition at an intra-school level (Tier 1) all the way through to the National School Games Finals (Tier 4) (see Appendix 1). Whereas previously competition was often perceived as being something that took place after school, as part of an extra-curricular offer provided by all schools, (often for the most-able performers), there was now a renewed focus on ensuring that as many young people (of all abilities) had access to high-quality competitive opportunities as possible (YST, 2018). The remit of SGOs was to help embed competition within schools.

Through the delivery of twilight workshops for local primary school PE coordinators in helping them to create more opportunities for children to engage in competition delivered both in and out of curriculum time. I saw the positive impact of traditional competition whereby one individual or team works to overcome the challenge offered by opponents; the values associated with fair play, the drive to master skills and develop tactics for success and the resilience that can be built, through perseverance in challenging circumstances. However, in looking to create opportunities for *all* to be successful, I was also conscious of the need to develop alternative approaches in creating competitive challenges built around pupils developing and improving their 'personal best'.

Alternatively, competition in schools is perceived as what takes place on sports day or in extra-curricular fixtures and sporting festivals. In these examples the focus and motivation of the competition is far too often the extrinsic rewards that come from 'winning'. Too often, a zero-sum philosophy exists, often facilitated by coaches, teachers and parents whose priorities are often to the detriment of their children's holistic development. Consequently, when I was invited in 2016 to contribute two chapters to a book designed to support and guide primary school teachers, (many of whom are often non-PE specialists), in how to deliver effective high-quality PE lessons, I felt compelled to share my beliefs that, if managed and delivered appropriately, competition can play a significant role in a child's development.

In a chapter titled 'Current Development in Physical Education', I highlight the misconceptions that many have in regard to competition; the fact that competition is often perceived as the end product or outcome of their work in traditional PE lessons. Rink's model for teaching games was developed around four stages of game play that ends with games that are modified or conditioned to focus on the application of the skills learned previously (Rink, 1989). However, the use of competition in this pedagogical application is often, not understood by children who are more concerned with simply winning the game.

In developing the Model for Effective Learning in Competition (MELC) (Howells et al., 2018) I wanted to share with teachers my experiences of how competition could be delivered effectively in the 'highly modified fashion' that Harvey and Donovan (2013, p.780) suggest. My experiences of using competition in PE and school sport environments has created a clear belief in the positive impact that competition can have if used appropriately as a pedagogical tool. This research was designed to challenge these views by creating controlled environments whereby different approaches to the delivery of competition could be evaluated to explore how they affect children's competence, confidence and enjoyment of PE.

In creating the MELC (Howells et al., 2018) the aim was for teachers to consider and apply the most appropriate level of competition for everyone to ensure that it is 'just right' (Kretchmar, 2006) in creating opportunities for all to achieve success. Additionally, Howells et al. (2018) consider three different 'types' of competition and how each can foster learning amongst children.

This research project was designed to investigate the practical application of the MELC for two, two-form entry primary schools to explore how competition can be used in PE lessons as a tool to build confidence, competence and enjoyment amongst primary aged children. This thesis will also analyse the findings to evaluate whether the results show differences within children in different key stages by considering the scores from children Year 2 (end of Key Stage 1 (KS1), aged 6-7) and Year 6 (end of KS2, aged 10-11), as well as across genders within these age ranges.

1.2 The gap in the field of children's competition

Competition has always featured prominently within the national curriculum for PE (NCPE) (DfE, 2013). However, by featuring as one of the four main aims and objectives within the subject's Purpose of Study the need for teachers to deliver competition within the 'new' NCPE (DfE. 2013) is perhaps more explicit now, whereby it is now expected that all students should 'engage in competitive sports and activities'. In KS1 pupils are required to take part in competitive physical activities 'both against self and against others…in a range of increasingly challenging situations' (p.2). Furthermore, in KS2 the NCPE (DfE., 2013) prescribes that children should 'play competitive games' and 'enjoy communicating, collaborating and competing with others' (p.2).

Current data, however, suggests there may be a disconnect between what the NCPE (DfE, 2013) requires and what is actually being delivered. A 2014 survey by the Marylebone Cricket Club and the cricket-based charity Chance to Shine, surveyed 1,000 children (aged 8-16) and 1,000 parents about their views regarding competition. The results showed that as much as 84% of the children surveyed believed experiencing winning and losing was important, 64% said they would be 'relieved, not bothered or happier' (no page number) if winning or losing were not a factor (Chance to Shine, 2014). This would suggest that as much as the children valued competition, there was something about the way it was being delivered, that was disengaging them.

Although competition maintains a high profile within the NCPE (DfE, 2013) there is no guidance for teachers as to how the aims and objectives can be achieved, let alone how competition should be taught. Indeed, Tsangaridou (2012) claims that

> 'a significant number of primary school teachers have low levels of confidence, do not possess the skills and knowledge to deliver appropriate PE instruction, have limited content knowledge and do not feel competent teaching PE' (p. 281).

Moreover, the House of Commons Education Committee (2013) suggested that the competitive nature of school sport 'deters some young children from participating in sport and physical activity'

(p.2). The former Chief Inspector of the Office for Standards in Education (Ofsted), however, highlights the 'positive effect' that competitive sport has on education, whereby 'schools that win on field, win in the exam hall' (Ofsted, 2014, p.3). This thesis will highlight how there are gaps in this field of research which it seeks to address. Much of the current research available focusses on the impact on older children and often relates to competition that takes place outside of curriculum time rather than considering how competition is used in PE lessons.

1.3 Research Aim:

To investigate the effective use of competition as a pedagogical tool to develop competence, confidence and enjoyment in PE lessons in primary school settings.

1.4 Research Questions:

1. How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

2. What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

CHAPTER TWO: Literature Review

2.0 Introduction

This chapter will review literature that investigates ideas, issues and theories surrounding the use of competition for children. Whilst there is a wealth of research, views and opinions, the discourse is often rooted in differing perceptions of what the term 'competition' means. Equally, much of the research surrounds the impact and influence of competition in a school sport setting (i.e. extra-curricular sporting provision in schools and at clubs, often associated with traditional team games). There appears to be far less research into the pedagogical value of using competition within PE lessons, particularly when comparing the differences posed by children in KS1 and KS2.

This chapter will begin by exploring how competition has developed within PE in primary schools, where competition 'sits' within the NCPE (DfE, 2013) and how recent political changes have raised the importance of competition within PE and school sport, considering the findings of Ofsted in the period post the London Olympics of 2012.

The literature review will then seek to define what is truly meant by the term competition and, in doing so it will consider the concepts of *true competition* versus *decompetition* (Shields and Funk, 2011). It will reflect on the views of different academics who have sought to categorise different types of competition and how these evolved into the creation of the MELC (Howells et al., 2018).

Finally, this chapter will consider the potential impact that competition has on an individual's competence, confidence and enjoyment in PE and how this may influence their engagement in physical activity in the future. The literature review will seek to critique confidence and competence, exploring different theories and perspectives on how competition can be used to develop each. It will examine recent research by Ni Chróinín et al. (2018) who propose that one of the five key facets of meaningful PE lessons is challenge that is delivered 'just right' (p.119) for each individual learner. Furthermore, this chapter will explore what 'just right' means, considering the work of

Csikszentmihalyi (2008) and how the concept of 'flow' influenced the creation of the 'competition learning zone' (CLZ) within the MELC (Howells et al., 2018 p.44). In doing so the literature review will also consider what current research suggests about age and gender differences and how these may influence competence, confidence and enjoyment in PE.

In 'Mastering Primary Physical Education' Howells et al. (2018) highlight the effective use of competition in primary school PE lessons as one of four key topics discussed in a chapter titled 'Current Developments in Physical Education' (Howells et al., 2018, p.19). This thesis will seek to investigate the practical application of the theory represented in this chapter, and in doing provide guidance and support for primary school teachers in using competition to deliver more engaging and effective PE lessons.

2.1 Competition within PE lessons

The very purpose and nature of PE has been a contested discourse for many years (Green, 2008). Its early roots as a structured curriculum subject can be found at the start of the twentieth century where the focus was solely on physical training to improve the health and well-being of children, with the purpose of developing a stronger and healthier workforce, without any real focus on competition (Armour and Harris, 2013). Lessons encouraged the development of gymnastic-based motor competencies delivered via formal, drill-type activities, reflected in the Swedish gymnastics movement. The 1970s and 1980s saw a shift towards a games-centred approach whereby children were exposed to more traditional sport specific lessons, where the focus was very much on developing the physical skills to successfully participate in team games (Pill et al., 2012), (the legacy of which is still very prominent today). With the shift towards a games-based curriculum, success in competitive environments was often a way of acknowledging individual competencies and improving tactical awareness.

With the development of the first National Curriculum in 1991, PE was given status as a foundation subject and in subsequent later revisions, children were encouraged to consider broader themes that could be applied across a range of activities. Embracing the words of Bruner (1983) when he claimed that movement represents 'the culture of childhood' (p.16), there was now a greater awareness of the way in which movement experience can create learning environments to support more holistic approaches towards child development. In doing so schools became more aware of the potential impacts of competition on a child's self-esteem (Johnson and Johnson, 1989) and, as such, schools either began to remove elements of competition that overemphasised the importance 'winning' or, alternatively, sought to create opportunities where *everyone* won. In doing so, primary schools often adopted an approach that placed an emphasis on 'taking part rather than winning' (Purcell, 2015).

In December 2010, the then Education Secretary, announced the new coalition government's approach to school sport leading up to, and beyond, the London 2012 Olympic and Paralympic Games. They shifted their stance, which had previously endorsed cooperative sports days towards positively promoting competition within PE and school sport, 'where school and parents are delivering on sports with competition at the heart' (Gove, in Harvey and O'Donovan, 2013, p.768). To help create an Olympic legacy within the country, the government promoted the development of education programmes such as 'Get Set' (British Olympic Association, 2010) and the 'School Games' (Youth Sport Trust, 2018). This heightened focus on competition in PE and school sport was clear when the new NCPE launched in 2014 (DfE, 2013).

2.2 Competence and Confidence as well as Competition within PE

Howells (2015) highlights the work of Laker (2001) in suggesting that a physically educated child should demonstrate development across three domains: practical; cognitive and social. The practical domain is concerned with the physical aspects of learning in PE, the mastery and application of physical skills. The cognitive domain relates to aspects of learning associated with decision-making, problem solving

and developing tactics and strategies for success. Finally, the social domain embraces aspects of learning associated with communication, teamwork and the ability to cope with success and failure. Arguing that perhaps too often teachers focus exclusively on the practical component, Howells (2015) proposes, that teaching and learning should take place across all the domains.

Table 1 lists some of the key characteristics academics have considered as representative of children who are physically educated. Whichever definition is applied to explain the nature of PE or whichever set of outcomes are sought, competition can certainly be considered a vehicle through which effective learning can take place. Whether it be to help to refine the skills and develop attitudes that Corbin (2002) refers to, or perhaps to foster the personal humility and resilience when coping with winning and losing via the affective domain that Bailey et al. (2009) references.

Indeed, in the most recent list (Howells et al., 2018), developed directly from the language of the current NCPE (DfE, 2013), 'competing' is considered one of the eight 'Cs' that teachers should aspire to achieve within their PE lessons (Howells et al., 2018). Moreover, these 'Cs' can be used to understand the different expected outcomes from KS1 children; (developing competence, confidence, coordination, co-operation and undertaking challenge), with the additional three Cs (communicating, collaborating and competing) included only at KS2. The NCPE will be explored in more detail in the next section, but even here one could interpret differences in possible approaches to the use of competition, based upon a child's age, whereby the youngest children may take part in 'challenges' whilst older children are expected to 'compete' (DfE, 2013). However, if competing is considered a key characteristic of a physically educated child, there is very limited support and guidance for teachers as to how this can be achieved. By comparison, in seeking to develop 'competence', through physical development, Gallahue and Ozmun (2011) has helped to support the production of numerous resources to assist teachers and coaches teach competence in skill development.

Corbin (2002)	Bailey et al. (2009)	Whitehead (2010)	Howells et al (2018)
Fitness Skills Values Attitudes	Physical Development Social Development Affective Development Cognitive Development	Motivation Confidence Competence Knowledge Understanding	Competence Confidence Coordination Co-operation Challenge Communicating Collaborating Competing

(Adapted from Lawrence. 2012, p.5)

Table 1: *Key Characteristics of physically educated children in primary schools*

The creation of the MELC (Howells et al., 2018) was for that very purpose and furthermore this thesis, was designed, to investigate the application of the MELC in practice and to enhance the knowledge and understanding of how the effective use of competition can support the development of competence, confidence and enjoyment in primary aged children.

2.3 Competition and the NCPE

Competition holds a prominent position within the NCPE (DfE, 2013) whereby the Purpose of Study defines a high-quality PE curriculum as being one in which children are inspired to 'succeed and excel in competitive sport' (DfE, 2013, p.1). The value of competition is stressed in terms of the benefits it bring, to 'build character and help to embed values such as fairness and respect' (p.1), thus echoing the views of Shields and Funk (2011) who propose that competition promotes 'excellence, ethics and

enjoyment, rather than anger, antagonism, and aggression' (p.8). Moreover, the need to ensure that all children take part in competitive sports and activities now forms one of the four overarching aims of the NCPE (DfE, 2013).

There are some subtle differences the use of language between the subject content for KS1 and KS2 which perhaps implies the consideration of slightly different approaches to the type of competition or how it should be delivered. At KS1 it suggests that children should 'engage' in competition but they also suggest that this might be 'against self' (DfE, 2013, p.2) as well as others. The NCPE (DfE, 2013) also suggests that children in KS1 should take part in cooperative activities. Howells et al. (2018) suggest that effective competition can be delivered: *against*; *alongside* and *with* others. These 'types' of competition, (which form a significant aspect of this research), would certainly appear to align with approaches outlined in the NCPE (DfE, 2013). Likewise, the idea that children should take part in 'increasingly challenging situations' (DfE, 2013, p2) supports the ideas associated with the CLZ (Howells et al., 2018), upon which this research has been developed.

Where KS1 children are encouraged to 'engage' in competition, children in KS2 should 'enjoy communicating, collaborating and competing against others' (DfE, 2013, p.2), again suggesting that teachers may need to consider how competition is delivered to ensure that all benefit and enjoy it, rather than just the more-able (Kohn, 1992). Nonetheless, there is still a slight emphasis here on traditional views of how competition is delivered, whereby the KS2 curriculum suggests that children should play 'competitive games' (DfE, 2013, p.2) going on to offer examples of activities that include football, netball, cricket and rounders.

2.4 Defining 'Competition'

Much of the discourse surrounding the educational value and relevance of competition as a pedagogical tool can be associated to different interpretations of the actual meaning of the word

'competition' (Shields and Funk, 2011). Therefore, it is important to make etymological sense of where the word originates from and how it is used in common language today.

Dombrowski (2009) explains that 'competition' comes from the Latin word *competitionem* which, according to his interpretation 'points to two parties striving for the same object in a match meant to determine the relative excellence of the two parties' (p.97). Shields and Funk (2011) take this further by arguing that the Latin prefix 'com' means 'with' and therefore competition takes place when opponents strive *with* each other to achieve excellence rather than necessarily *against* them. They emphasise that in 'true competition' (p.8) the process by which individuals work together to achieve excellence is far more important than the outcomes. Martina Navratilova once claimed in an interview that her greatest ever performance on a tennis court took place in a match that she lost. She claimed that the efforts of her great rival, Chris Evert, were such that she had to raise her level of performance beyond anything she had produced before to match her opponent, even if she eventually lost. (Shields and Bredemeier, 2009). Likewise, in a tug-of-war the effort that one team has to contribute to achieve success is determined by how hard the opposing team work at the other end of the role. Shields and Funk (2011) propose that enjoyment comes from the sense of accomplishment achieved when pursuing strenuous goals. 'It is the exhilaration, excitement, and sense of accomplishment that comes with maximising one's physical and mental potential in the pursuit of a goal' (Shields and Funk, 2011, p.8).

Shields and Funk (2011) claim that modern society has misinterpreted what true competition means, whereby too many people are preoccupied with simply the outcome of a competition rather than the process, where winning becomes the sole focus and extrinsic rewards are perceived as a measure of success. Consequently, superiority over others that is achieved, with little effort energy should be celebrated. Shields and Funk (2011) define this as 'decompetition' (p.8). Unfortunately, children's understanding of the meaning and value of competition is often influenced by the values that others associate with winning. As such, 'the perceptions of how children view competition are often driven,

by influential others (parents, coaches, peers) and misguided expectations placed upon them' (Howells et al., 2018, p.33).

Shields and Funk (2011) suggest that if competition is used effectively and appropriately, as a tool to challenge children to focus their attention and refine their skills, then competition becomes a valuable instrument for personal development. When you use competition effectively it can have the same impact as other recognised pedagogical approaches, such as the use of differentiation, adopting different teaching styles and effective use of observation, assessment and feedback, in helping individuals achieve their true potential.

In his definition, Hyland (1998) sees competition as:

> '…a questioning of each other together, a striving together, presumably so that each participant achieves a level of excellence that could not have been achieved alone, without the mutual striving, without the competition' (p34).

This view of competition, by definition, leads to the supposition that competition needs to involve comparisons to others to assess performance and drive improvement. Indeed, Leah and Capel (2000) suggest that by its very nature, competition focuses solely (and exclusively) on the outcome or results of the contest. They propose that instead, educators should seek to build more inclusive environments, rather than encourage competition. 'Co-operation can be viewed as the means or the process through which the learner interacts with others to achieve agreed goals' (Leah and Capel 2000, p.145).

Skultety (2011) attempts to address the issue of the need for 'others', when defining competition by suggesting that performance comparison can take place with just one performer by referring to multiple actions rather than multiple participants. 'Competition requires at least two participant actions; this will make it account for competitive events in which a single individual competes against her own previous attempts' (Skultety, 2011 p.440). Thus, the idea of creating effective competition

through challenging children to improve their personal bests would certainly seem good practice within an education setting.

Siedentop and Van der Mars (2016) pull the various conflicting etymological approaches together when they delineate three clear meanings to the concept of competition in a PE and school sport context. They first reflect on the word competition as a noun, meaning to come together, often used to describe an event or festival where different teams or performers come in a communal environment to participate in a festivals and tournaments. They describe the educational benefits that communal 'events' can bring, emphasising sports rituals and traditions as well as developing children's appreciation of rules, structure and organisation (Siedentop and Van der Mars, 2016).

Their second meaning of competition in an educational setting relates to the idea of striving to achieve a goal or objective. The word competent is often used to reflect individuals who have mastered techniques. Siedentop and Van der Mars (2016) propose that the idea of developing mastery of performance, developing competence, or simply trying to get better, is a fundamental aspect of a child's growth and motivation, not just in PE, but in life. Being competent allows individuals to then be skillful in competitive situations. Individuals are able to measure and benchmark performances by competing in a consistent and standardised manner (such as measuring throws or timing runs).

The third meaning is the one, which Siedentop and Van der Mars (2016) contend, is both the most familiar, and perhaps the most problematic definition. To compete in a physical activity creates a state of rivalry; a competition between opposing factors in which many perceive that success for one party must come at the expense of the other. Particularly in a sporting context, this definition reflects the zero-sum view of competition that pervades much of society where what one competitor gains through 'winning', must be lost by the other. The concept of rivalry can be viewed, in many different formats; team against team, individual against a record or even a physical barrier. Success via the concept of rivalry does not, however, necessarily lead to the perceived failure of others. There is only ever one winner of the London Marathon, for example, yet certainly the thousands of runners who

compete to simply finish or achieve a personal best time would not consider themselves as 'losers'. Siedentop and Van der Mars (2016), (like Shields and Funk, 2011), again point to the fact that in sporting environments it is often the actions of over-zealous teachers, coaches and parents who accentuate the zero-sum view of competition as a rivalry.

The purpose of this thesis was to explore how competition could be used effectively, as a pedagogical tool. As such the thesis adopted Shield and Bredemeier's concept of 'true competition' (2011) in conjunction with Siedentop and Van der Mar's (2016) second definition, whereby competition can be used to help develop competence and master fundamental movement skills within PE lessons. However, in doing so the thesis also explored how the use of 'competition as a rivalry' would also influence results.

2.5 Types of Competition

In contrast to defining what competition means (or *is*), this section will explore what research tells us about *how* competition could be delivered. In particular, it will look at how academics have sought to categorise different types of competition and how this research underpins the types of competition that Howells et al. (2018) suggest are the most appropriate for delivering competition in primary PE lessons; competing *against*, *alongside* and *with* others.

In creating his 'Categories of Competition' (2011) Skultety considers two factors that are fundamental when differentiating between types of competitions; firstly, the relationship between the competitors and how they influence each other's performance, and secondly, the assessment mechanism required to score (and ultimately, compare) participants' performances. Skultety (2011) suggests competitors can either participate in such a way that they directly influence and impact each other, (such as can be found in typical invasion games or in a tennis match). Or they can both participate without directly influencing the performance of others, (such as a gymnast performing scored routines, or an athlete

participating in a long jump competition). These distinctions he draws allows him to categorise competitions via a participant's actions, whereby they are either encumbered or unencumbered by their opponents.

Skultety (2011) expands the work of Suits (2002) and suggests that competition of any nature (be it a game or a performance) can be assessed, via two modes: standardised against pre-set criteria or vis-à-vis, compared directly against those of their opponents (their score). Thus, a sprint race is an unencumbered competition, but is assessed vis-à-vis, with the runner crossing the finish line first considered the victor. Skultety (2011) delineates four unique competition types highlighted in Appendix 2.

Royce (2013) challenges the model on several grounds, proposing that the categorisations may be somewhat simplistic in nature and highlights competition anomalies are not covered within Skultety's (2011) work. He questions where 'polyglot' sports that contain elements of more than one of the four categories fit. For example, scoring in rugby can come from encumbered competition (when tries are scored) but also from unencumbered activities (such as penalty kicks and conversions). Equally, some sports involve elements of both vis-à-vis and standardised competition, such as mogul skiing where participants are required to proceed down the course in the fastest possible time (vis-à-vis), but are also scored on the artistic nature of their jumps (standardised), (Royce, 2013).

All of this suggests that primary teachers, many of whom are not PE specialists, are likely to find it challenging to select what is the most appropriate type of competition and method of delivery. In designing the MELC, Howells et al. (2018) have attempted to draw on, but simplify, the findings of previous research in defining three types of competition that primary teachers could consider using in their PE lessons; competition *against*, *alongside*, and *with* others.

The first type, competing *against* others, is most closely modelled on Fait and Billings 'direct competition' where the participants are 'encumbered vis-à-vis' (Skultety, 2011). Direct competition is when individuals (or teams) seek the same goal but where their goal achievement is negatively

correlated. An individual or team's success is directly influenced by the performance of others and encompasses the more traditional perceived view of competition that is found in typical modified sports delivered within primary PE lessons, such as tag rugby, high-5 netball or mini tennis. The competition is directly posed by the opponent(s) performance and score. In this type of competition, individuals need to develop tactics and strategies for attacking and defending and they may begin to appreciate the importance of team members performing different roles or positions. It is also through this type of competition that teachers can help children develop an appreciation of rules, fair play and sportsmanship, thus addressing some of the challenges raised by the negative views often associated with the concept of 'decompetition' (Shields and Funk, 2011).

The second type of competition; competing *alongside* others, mirrors the concept of means independent competition from Johnson and Johnson's social interdependence theory (1989) whereby children work independently of others to improve upon previous personal best scores. Others do not directly influence an individual's performance, but by working alongside others, it may motivate children to work harder. Children are the encouraged to achieve their longest distance, fastest time or best score through demonstrating increased and mastery of skills. This approach helps teachers to focus, on individual competency which enables them to create differentiated targets that can have a huge impact on an individual's confidence within PE.

The third type of competition is, competing *with* others and embraces the ideas associated with the aspirations of Leah and Capel (2000) to adopt a more inclusive approach that focusses on co-operation as in Mindura and Glover's partnership model for competition (1999). In this type of competition children work in pairs or teams to overcome challenges, whereby the competition is with the challenge or task rather than other children. Typically found in team building and problem-solving activities, this approach rewards creativity and innovation as well as developing communication and leadership skills amongst children (Howells et al., 2018).

2.6 The effective use of competition in primary school physical education

Bergmann (1998) highlights the importance for educators to appreciate the 'values' that can be developed through children's involvement in competitive situations. A child's ability to cope with the results of competition can help prepare them for competitive demands of the 'real world'; building character traits such as courage, resilience, commitment and discipline, for example.

Howells, (in Sewell, 2015) however, emphasises the need for care and consideration when planning for the use of competition in curriculum PE lessons, particularly with younger age children. Citing guidance from the House of Commons Education Committee (2013), she suggests that if handled incorrectly competition in school sport can have the effect of deterring children from future engagement in physical activity and sport. Moreover, she argues that the impact of competition can be overwhelming for some children, to the extent that they are unable to perform competently, which can lead to unfulfilled potential and reduce the chances of lifelong engagement with physical activity (Passer and Wilson, 2002).

Howells, (in Sewell, 2015), goes onto suggest two ways in competition can be delivered within curriculum-based lessons. The first of these is through the development of individual targets whereby children have their own unique goals to accomplish (thus aligning with the objectives of the NCPE (DfE, 2013)). Lawrence (2012) previously supports the notion that teachers should seek to create opportunities for children to achieve 'personal mastery where success is reflected in the completion of a given task rather than by comparison against others' (p.7).

The second way Howells, (in Sewell, 2015), suggests that teachers can plan for developing competitive situations in PE lessons is where children (either individually or as part of a team) are required to compete directly against others. In such situations, she proposes that again success should be measured against individual or team targets as opposed to simply achieving victory against an opponent. Here the key focus of the learning should be on the development of cognitive skills such as problem solving and the development of simple tactics. Embracing the belief that PE encourages

development physically, socially and cognitively as well as physically, Howells et al. (2018) suggest a number of ways that competition can be used to educate children in each of the three domains within PE lessons (see Appendix 3).

Shields and Funk (2011), suggest three steps that teachers can follow to deliver effective competition; 'teach respect for partners', 'focus on excellence' and 'aim for enjoyment' (pp.10-11), these steps link very closely to the aims of this thesis (section 1.2). Shields and Funk, (2011) explore how competition can be delivered effectively and emphasise the key to 'focus on excellence' is to develop confidence and competence. They encourage the importance of creating a culture of self-improvement whereby the intrinsic drive to improve should take precedence above the need to beat others. Therefore, they recommend that teachers should encourage children to understand the learning opportunities that can be taken from every victory and every defeat. Simply put, teachers should 'avoid using winning as the standard by which performances are judged' (Shields and Funk, 2011, p.10). They highlight the importance of building confidence, and the need for teachers to praise effort and reframe mistakes as opportunities for growth. If not 'mistakes can create disincentives for them to take the risks that lead to learning' (p.10).

Shields and Funk's (2011) research is one of the few articles that really explores how competition can be delivered effectively. However, produced by authors from the USA and written before the publication of the 'new' national curriculum for PE (DfE., 2013), teachers may question its relevance and therefore may be unsure to apply the ideas in their lessons.

2.7 Defining the other Key Terms

2.7.1 Pedagogy

The title of this thesis seeks to explore how competition can be used as a 'pedagogical tool' to support teachers in primary PE lessons. Consequently, some consideration needs to be made with regards to what is meant by the term 'pedagogical tool'. Indeed, Green (2008, p.219) highlights the challenges in

defining pedagogy and argues that it is often used as a 'catch-all term for the 'science', 'art' or even 'craft' of teaching.

Siedentop (1991) cites Gage (1972, p.195) in suggesting that effective teaching practices are the 'tools of the trade'. However, he gives a little more insight by suggesting that effective pedagogy relates to the manner in which teachers manage the environment around them to ensure students achieve their specific desired aims and outcomes (Siedentop, 1991). Whilst Siedentop, arguably writes from a US perspective, possibly regarding the curriculum in that country, at that time, Penney and Waring (2000, p.6), who are based in the UK, offer a slightly different perspective. They (Penny and Waring, 2000) argue that pedagogy is more than simply considering how a curriculum can be most effectively delivered, but also that the 'what' and 'why' are important, suggesting that a teacher's pedagogical approach may be driven as much by their own personal philosophy surrounding effective teaching and learning, coupled with their views and understanding of the general rationale for PE. Indeed, rather than simply being the science or art of teaching, pedagogy should describe the interaction between a child and an adult who are engaged together in a learning experience. (Kentel, 2001).

When defining his view of pedagogy Shulman (1987) identifies seven key knowledge areas that effective teachers should develop (see below). Metzler (2017) subsequently provides greater insight by relating these concepts specifically to the teaching of PE. (Metzler's interpretations of Shulman's seven factors are shown in brackets):

1. Content Knowledge - (subject matter)
2. General pedagogical knowledge – (generic teaching methods)
3. ***Pedagogical content knowledge – (subject specific teaching methods)***
4. Knowledge of learners and their characteristics – (learning as a process)
5. Curriculum knowledge – (how content develops)
6. Knowledge of educational contexts – (how context impacts)
7. Knowledge of educational ends, purposes and values – (educational goals)

(Metzler 2017, p.52)

Of these seven factors listed above, Shulman (1987, p.9) defines pedagogical content knowledge (PCK) as 'the ways of representing and formulating the subject matter that makes it comprehensible to others'. The purpose of this study in helping primary teachers to understand how competition can be used as a 'pedagogical tool' is to support the development of their 'pedagogical content knowledge'. It seeks to help teachers understand how and where they can use competition to develop competence, confidence and enjoyment in PE and in doing so embraces the philosophies of Kentel (2001, p.4):

> 'Sound pedagogy encompasses those practices that provide a positive learning climate in which children can explore, discover, gain insight, and become literate…Sound pedagogy in physical education allows children to develop positive experiences while gaining knowledge and motor competencies that will benefit them throughout their lives.'

Kentel's (2001) interpretation of 'sound pedagogy' places a great emphasis on the key constructs that this thesis seeks to explore. Creating a 'positive learning climate' requires children to have the *confidence* to 'explore', 'discover' and, ultimately, 'gain insight'. Children often equate 'positive learning experiences' with the *enjoyment* they take from those lessons and a, ultimately, sense of improved *competency* (Beni et al. 2017).

2.72 Competence

Self-Determination Theory (SDT) (Deci and Ryan, 1985) identifies *competence* as one of three basic needs that all humans seek. The idea that humans need to develop competence to achieve mastery of tasks that they perceive are important to them is key to them being motivated to act. (The other 'needs' describe humans' desire to have control over their lives, '*autonomy'* and the need for close relationships with other, '*relatedness*') (Deci and Ryan, 1985). Moreover, when highlighting the importance of PE as a curriculum subject Bailey (2007) argues that physical competence can be a

significant factor that drives social acceptance in children, and by doing so also develops 'their personal confidence and self-esteem' (Pickup et al., 2008, p.5).

Beni et al (2017) reviewed 50 peer reviewed articles published since 1987 in order to understand what constitutes 'meaningful experiences' for children in PE lessons. One of the six features that Beni et al. (2017) conclude is fundamental to creating meaningful PE lessons is the concept of motor competence; i.e. when children feel they have learned new skills and perceive themselves as being more motor competent. Conversely, they acknowledge research from Erhorn (2014) where interviews and observation of primary school aged children concluded that low levels of perceived competence were linked to lower levels of enjoyment in PE and increased chances of children not participating satisfactorily in the lesson. Indeed, this supports SDT (Deci and Ryan, 1985), whereby perceived 'incompetence' is considered a significant regulating factor in driving amotivation (Deci and Ryan, 2000) (See Appendix 1.)

Kirk (2005) emphasises the importance of developing young people's competence in PE during their primary school years as crucial to their continued engagement with physical activity. This is a view shared by Wallhead and Buckworth (2004) whose research lead them to conclude that 'perceived competence is a powerful psychological correlate of youth physical activity' (p.286). When exploring the nature and purpose of PE in schools the term physical literacy is often used to describe the aspirational outcome from an effective PE programme. Whitehead's (2010) definition of physical literacy includes physical competence as one of the key outcomes. It is, perhaps unsurprising, therefore that when the current National Curriculum for PE was published in 2013 one of the four aims is that all pupils 'develop competence to excel in a broad range of physical activities' (DfE. 2013, p.2). More specifically, at Key Stage 1 pupils are expected to become 'increasingly more competent and confident' and to master basic movements and at Key Stage 2 'continue to apply and develop a broader range of skills' (DfE. 2013, p.2)

Therefore, is it important that teachers are able to plan and deliver lessons in which pupils are engaged in activities to help support the development of greater competence in a range of physical activities. This study sought to investigate ways in which effective use of competition could support teachers achieve this aim. Gallahue and Ozmun (2011) provide valuable context for this by suggesting competence is described asbeing the point at which children are mechanically efficient, coordinated and controlled in their movement patterns when performing fundamental movement skills (FMS) both in isolation (initially) and in combination with others. In terms of physical development, these skills should be mastered between the ages 2-7; the fundamental movement stage (Gallahue and Ozmun, 2011). Once mastered, FMS form the building blocks for the more complex sport specific skills that children require to take part in many of the sports and activities undertaken in schools and beyond. FMS can be broken down into three categories: locomotor; stability and manipulation skills. (Gallahue and Ozmun, 2011).

The physical activity challenges selected for this research were based around FMS of running (locomotion), jumping (stability) and catching and throwing (manipulation) that should be 'mastered' by the end of KS1 (Gallahue and Ozmun, 2011). (Details of these challenges will be presented in the next chapter). However, in alignment with both the theory presented by Gallahue and Ozmun (2011), and in conjunction with the aims and objectives of NCPE (DfE., 2013) the challenges are differentiated to address the ages and ability differences between children KS1 and KS2. Thus, the running challenge for KS1 children requires them shuttle in a straight line between two points, demonstrating their competence of the skill in isolation. The running challenge for KS2 children, however, requires them move around a star shaped circuit in a more complex way, which involves combination of running and agility skills.

2.7.3 Confidence

The Purpose of Study for the NCPE (DfE. 2013) suggests that a high-quality PE curriculum should ensure all children have the chance to become 'physically confident in a way which supports their health and fitness'. Indeed, the link between self-confidence and continued involvement in sport and physical activity has been highlighted for many years (Feltz and Petchlikoff 1983).

Throughout literature there are many terms used to define 'confidence', and although they have similar meanings, closer consideration needs to be given to these definitions in order to fully appreciate their application. Consequently, as much as self-confidence (like self-esteem) is often perceived to describe an individual's more general feelings about their capabilities (Graydon, 1997), when considering an individual's 'confidence' to achieve a specific aim or goal, the term 'self-efficacy' (Bandura 1977) is perhaps a more appropriate term.

Bandura (1977) contends that an individual's sense of self-efficacy is a significant driving factor in how individuals approach and overcome challenges and is developed from a combination of the outcome of previous personal experiences and self-perception (which can come from vicarious experiences, feedback and persuasion from others and physiological symptoms). Bandura defined self-efficacy as 'the belief in one's capabilities to organise and execute the courses of action required to manage prospective situations' (Bandura, 1995, p. 2). An individual's self-efficacy will influence the effort and enthusiasm with which they will approach tasks. As such, individual's with high self-efficacy describes those who are more likely to think positively about their chances of achieving that task and persevere longer to do so. Nonetheless self-efficacy can affect motivation to perform both negatively and positively. For example, those with lower self-efficacy may work harder to prepare for something, aware that this is essential for them to succeed, whereas someone with high self-efficacy may not be quite so incentivised and prepare less well.

Bandura's Social Cognitive Theory (1977) highlights four areas that can influence an individual's self-efficacy (see Appendix 4). Each of these factors can be impacted by the way in which competition is used in PE lessons. Thus research (like this) that is designed to helps raise awareness of ways in which teachers can apply challenges in a way that boosts self-efficacy can have a positive impact on the way in which children perceive their own ability and their motivation to perform.

For the purpose of this thesis the term confidence relates to Bandura's definition of self-efficacy. However, for the benefit of the staff and pupils involved in the study, for whom the terminology may have caused some confusion, the more general term of 'confidence' was used throughout.

2.7.4 Enjoyment

Along with 'increased motor competence', another of the six key features of meaningful PE lessons described by Beni et al. (2017) is the concept of 'fun'. In many respects these two factors are linked. A big factor in children's enjoyment of PE is their level of competence, to the extent that Biddle (2006) suggests that it is the single factor most likely to determine their participation in PE lessons.

As highlighted previously, evidence suggests that those individuals who are driven more by intrinsic motivation; those who participate predominantly for personal development, are more likely to enjoy their PE lessons (Wang and Liu, 2007). As such Goudas and Biddle (1993, P.145) argue that 'fun and enjoyment emerge as the major motive for participation' amongst young people. Once again, these views align with SDT (Deci and Ryan, 1985). This seminal work explores the nature of motivation within humans and how it drives individual behaviour. Acknowledging the positive and dynamic consequences of individuals who are highly motivated whereby 'motivation produces' (Deci and Ryan, 2000, p.69) the SDT posits that what causes people to act, (their motivation), can come from different sources. Individuals who are extrinsically motivated act as a consequence of external influences, be that from the presence of rewards, grading systems or simply to earn the appreciation and acknowledgement from others. Intrinsic motivation, conversely, comes from within the individual, whereby their actions are internally driven by their values, interests and drive for self-growth. Further

studies have shown that those who intrinsically motivated have 'more interest, excitement and confidence, which in turn is manifest both as enhanced performance persistence and creativity and as heightened vitality, self-esteem and general well-being' (Deci and Ryan, 2000 p.69) than those whose motivation comes from external sources.

Dismore and Bailey (2011) explore the impact of enjoyment in PE lessons by considering not only how children define fun and enjoyment as separate constructs, but also how these impact their attitudes towards PE across different age groups. They argue that whilst enjoyment is often valued in developing positive attitudes, fun has not always been perceived as an 'appropriate outcome' (p.3) in PE lessons. Beni et al. (2017), however, conclude that 'a lack of fun can have a deleterious effect on participation and meaningfulness of an experience' (p.300). Equally, Rikard and Banville's (2006) research highlighted how activities that were not perceived as being fun were a major factor in children choosing not to take part in lessons.

Rikard and Barnville (2006) also suggest many children associate challenge with enjoyment. Dismore and Bailey (2011) take this further by suggesting that as much as fun was the most consistent factor associated with children who had positive feelings about their PE lessons in Key Stage 2, by the time they transitioned to Key Stage 3 how they defined fun changed, whereby, 'children began to describe fun in terms of learning challenge rather than in relation to the hedonic response to playing games' (p.3).

Shields and Funk's (2011) fifth step for success in effectively delivering 'true competition' is to 'aim for enjoyment' whereby 'students are enjoying themselves, when they are infected with positive enthusiasm, they are more engaged and focussed, which leads to better performances' (p.10). They suggest several ways that this can be achieved, including the importance of setting challenging but achievable tasks. Echoing the work of Csikszentmihalyi (2008), Shields and Funk (2011) propose that when tasks are too easy children will become bored and likewise, they will quickly become frustrated with tasks that are too difficult. The NCPE (DfE, 2013) also stresses the importance of enjoyment within

the aims of study and states children should '*enjoy* communicating, collaborating and competing' (DfE, 2013, p.2)

Consequently, it could be argued that competition that delivers appropriate levels of challenge could positively impact levels of enjoyment in PE lessons, and potentially children's ability to experience a state of 'flow' (Csikszentmihalyi, 2008). Likewise, children who enjoy their PE lessons are likely to be more active and engaged, and their capacity for developing greater competence and confidence increases. Consequently, in addition to investigating which types and level of competition produced the highest levels of confidence and competence, this research also sought to discover which *types* of competition children enjoyed the most. Moreover, whereas Dismore and Bailey (2011) focus their research on Key Stage 2 and 3 this thesis seeks to expand knowledge in this field by also considering the views and attitudes of children in Key Stage 1, an area which is often overlooked in this area of research..

A young person's perception of their own level of competence in relation to their peers can often be a key factor in determining their confidence in PE and, ultimately their willingness to participate (Kirk 2005). Therefore, the need to set appropriate levels of competition that encourage the development and mastery of skills, in a climate where the effort is rewarded with appropriate levels of success and, in turn inspires and motivates children to work harder, is crucially important. These are themes that are mirrored in Csikszentmihalyi's (2008) research on 'flow' and most recently in research into the idea of 'meaningful PE' (Beni at al. 2017).

2.8 Meaningful PE

Beni et al. (2017) investigated 50 peer reviewed articles about school children's experiences of meaningful PE and concluded that five key factors should be considered in the future design of PE curriculum in order to ensure that what takes place is 'meaningful'; social interaction, fun, challenge, motor competence, and personally relevant learning. When exploring the concept of challenge Beni et al. (2017) highlight the importance that is placed on the level of challenge being appropriate to each

individual pupil. Beni et al. (2017) cite research by Dyson (2005) where students regularly associated enjoyment in PE lessons with the presence of challenge and, in particular, where the children had an element of choice in the level of challenge that they undertook. Likewise, Rikard and Banville (2006) recognised that those students who associated challenge with enjoyment often sought greater levels of challenge than they were currently undertaking, whilst Clark et al. (2011) noted that those children who claimed that they were often bored in PE lesson associated this with there being a lack of appropriate levels of challenge in their lessons.

Moreover, Ni Chróinín et al. (2018) applied the five principles of meaningful PE when training 106 pre-service teachers. Feedback from the trainees suggest that they viewed the importance of creating 'just right' challenges as a 'cornerstone of learning and assessment' (p.127) in PE. Beni at al. (2017) define challenge as the perceived level of difficulty of a given task for participants. They describe competition as a 'sub-theme that further extends how students think of challenge' (p.301). From their research they suggest that competition is a vehicle by which challenge can be delivered, and that the way in which it is delivered is crucially important in terms of influencing children' enjoyment of the experience. Thus, Beni et al. (2017) draw the conclusion that when teachers deliver competition in their lessons it should be delivered in such a way that the 'emphasis be placed on the challenge(s) inherent in the process of competing rather than on the outcome (that is, winning and losing)' (p.302).

2.9 The Skill-Challenge Balance – developing confidence through achieving 'Flow'

Although their research is somewhat dated, Bressan and Weiss (1982) explain the relationship between competence and confidence in PE, and this provides more evidence as to why mastery of FMS is important for children to maintain a lifelong engagement with physical activity, and why developing challenges that are 'just right' are crucial to achieving skill mastery. Drawing on Bandura's theory of self-efficacy (1977), Bressnan and Weiss (1982) propose a 'movement involvement cycle' (p.40) whereby confidence comes as a result, of children developing the competence to meet skill

challenges posed in lessons. Their level of confidence, in turn, then dictates the choices they make regarding their effort and persistence to overcome further (and potentially more complex) challenges that are posed in future lessons, and thus the cycle continues. Consequently, Bressan and Weiss (1982) identify 'skill development and competence as the basis for effecting changes in self-confidence' (p.40)

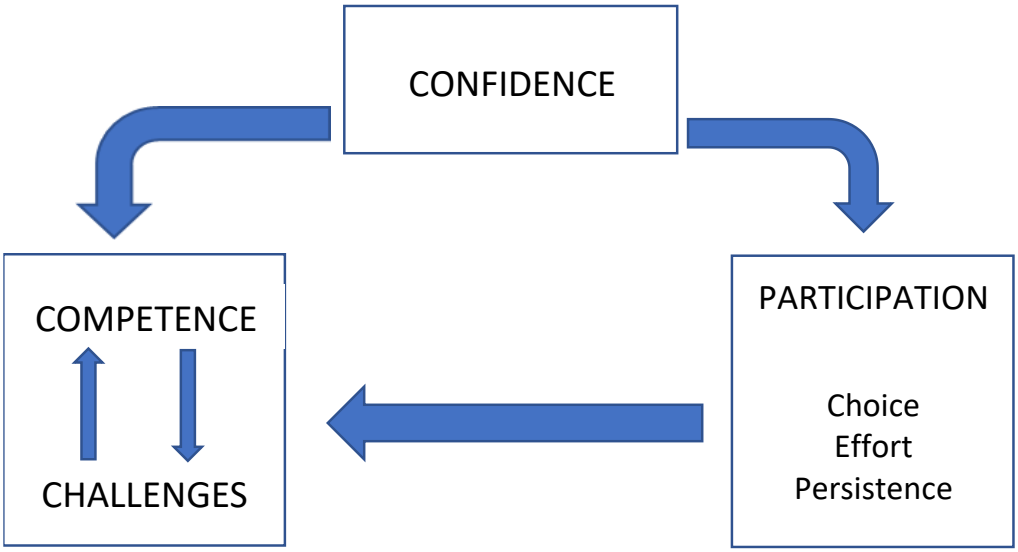

Figure 1: *The Movement Involvement Cycle (Bressan and Weiss, 1982, p.40).*

Csikszentmihalyi first introduced his research on the positive psychology associated with a 'state of flow' in the 1970s, described as being an 'holistic sensation that people have when they act with total involvement' in given tasks (Beard and Csikszentmihalyi, 2015, p.353). Individuals who possess both the confidence to achieve and the appropriate level of competence achieve a state of 'flow' whereby they have a heightened sense of awareness and self-wellbeing. They are fully engaged in and enjoying their performance (Morris and Summers, 2004). In a sporting context this can be seen when an individual is fully immersed in an activity and completely engaged in confidently achieving a task, whereby they are perceived as being 'in the zone'. It is a harmonious experience, when, as the body and mind are working as one, the individual finds the process effortless and is confident in their ability to succeed. This is where Csikszentmihalyi perceives individuals reach a state of flow (Jackson & Csikszentmihalyi, 1999).

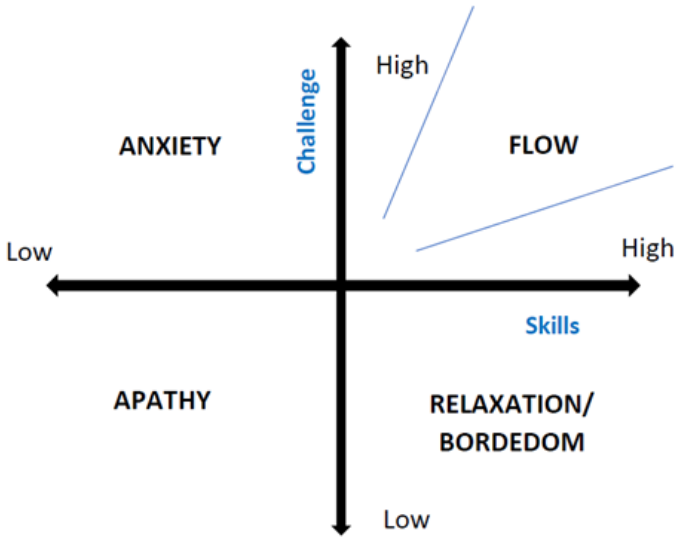

Figure 2: *Model of Flow State (Jackson & Csikszentmihalyi, 1999. p.37)*

To achieve flow individuals must have a good balance between the perceived level of challenge of the task and their own perceived competence in the skills required to achieve the desired outcome. Jackson and Csikszentmihalyi (1999) recommend that when individuals possess the appropriate skill level to achieve success (competence) and the belief in their ability to succeed (confidence); whereby 'they know what to do and believe they can success' (p.8), they achieve a state of flow. This thesis will examine the type of competition children feel they enjoy the most as well and considering the level of competence they achieve within those to gauge if the presence of the CLZ aligns with the feelings and experiences Jackson and Csikszentmihalyi (1999) associate with a state of 'flow'.

Dismore & Bailey, (2011) suggest that one of the key factors behind negative experiences in PE is boredom, often as the result of continuously repeating exercises and activities that children have already mastered.. These studies suggest that it is important to set individual challenges within PE lessons as this thesis will consider.

2.10 The Model for Effective Learning in Competition (MELC)

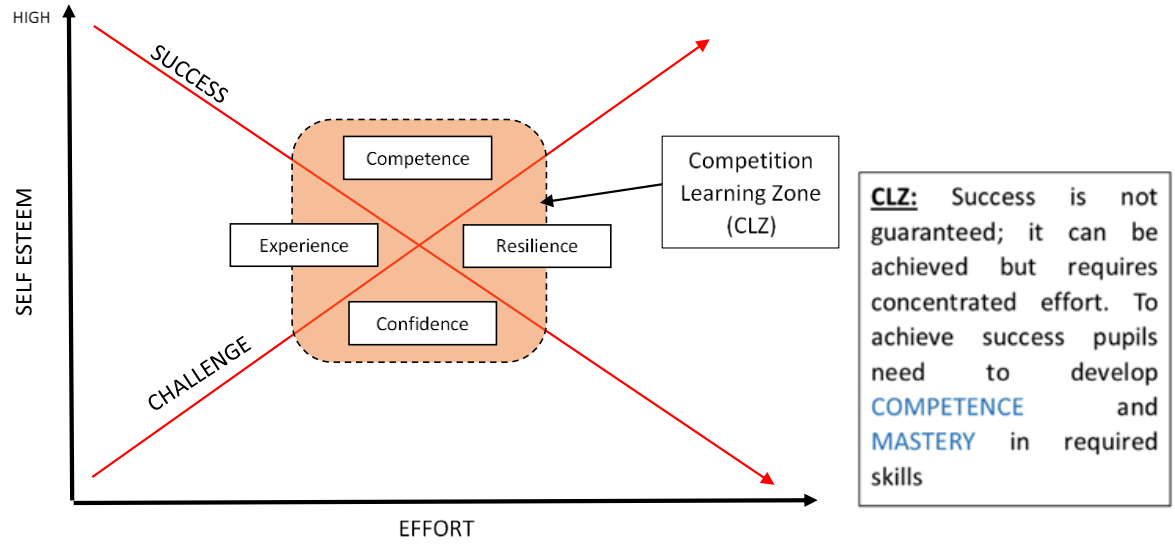

Figure 3: *The Model for Effective Learning in Competition (MELC) (Howells et al. 2018, p.44).*

The MELC explores the relationship between the level of challenge offered within a competitive activity and the level of success achieved, suggesting that there is an optimal zone for learning when these two variables are in equity, but where an individual is required to sustain a reasonable amount of effort to achieve that success. This area is called the 'Competition Learning Zone' (CLZ). This idea of an optimum area for effective competition was developed from Csikszentmihalyi's 'flow' theory (2008) and, more recent research in which challenge that is delivered 'just right' is considered one of the five key principles of 'meaningful PE' (Beni et al., 2017). Although the MELC (Howells et al., 2018) has similarities to Csikszentmihalyi's (2008) work on flow, there are some key differences, in particular when considering how competition should be delivered within PE lessons. Whereas the flow model cautions about increased levels of anxiety and boredom when flow is not achieved (Appendix 4), Howells et al. (2018) propose that effective learning can take place outside of the CLZ and may even be more beneficial to certain children. For example, Howells et al. (2018) suggest that in situations where success can be achieved at lower levels of challenge with reduced effort it can have the positive impact of increasing children's self-esteem. If this in turn creates greater confidence and enjoyment,

then the children may be willing to apply themselves more when challenges become harder. Consequently, Howells et al. (2018) suggest that this approach is good when working with children of lower ability; or confidence; or when children are trying to become competent in a new activity. Equally, they propose that more-able children can learn to become more focussed and resilient by undertaking challenges that are increasingly harder and require even more sustained effort, but do not always achieve success. Certainly, if managed correctly, creating these environments may support children learning to cope with hardship. This thesis was designed to investigate the impact of low, middle and high levels of challenge and how these factors effect competence, confidence and enjoyment to succeed.

Although wary that the focus of this thesis is to investigate the practical application of the MELC (Howells et al., 2018) and that it is not a study of motivational theory, in order to offer a balanced critique of the MELC (Howells et al., 2018) it is important to examine the constructs of the model and roots of the theory that underpins it.

As much as the MELC (Howells et al., 2018) provides some valuable guidance for teachers in helping them to understand how differing levels of challenge can impact the motivation and success levels achieved by children, the terminology used within the model could potentially be misleading. For example, as mentioned previously (p.33) several different terms are often used as to define confidence. In the case of the MELC (Howells et al., 2018) self-esteem is used to describe an individual's level of confidence to perform a given task. However, Harter (2012) describes self-esteem as an individual's overall sense of self-worth. Likewise, Trzesniewski et al. (2006) relates the term to a more holistic view of personal well-being, whereby those with high levels of self-esteem are generally happy within their lives. The MELC (Howells et al., 2018) appears to use self-esteem to describe an individual's confidence to achieve the completion of specific tasks, and consequently this may be an inappropriate term whereby those who apply the model may feel that it's impact may be greater than

it is intended to be. As such, applying Bandura's (1977) definition it would appear that 'self-efficacy' would be a more appropriate term to apply to this axis of the model.

Likewise, other terms used within the MELC (Howells et al., 2018) perhaps need to be defined with greater academic vigour. 'Success', when applied to a child developing individual skills appears to be synonymous with the term 'competence' as defined by Gallahue and Ozmun (2011). However, teachers may relate the term success more with the concept of winning and losing which may encourage an inappropriate focus on these factors and, ultimately foster ideals associated with decompetition as defined by Shields and Funk (2011). This is the very thing that the work of Howells et al. (2018) seeks to avoid. Additionally, 'effort' in this model can be interpreted as relating to the practical implementation 'motivation to perform' (Nicholls 1984).

Rather than consider the semantics of the terminology used, greater criticism could be aimed at some of the assumptions made regarding the relationship between the component elements within the model. The model makes certain assumptions about the relationship between the four key components (the level of challenge, chances of success, effort applied and self-esteem) whereby it suggests that changes to one element will have an impact on the others. For example, the MELC (Howells et al., 2018) suggests that if the level of challenge is perceived to be too high, chances of success will diminish, and the more effort applied without success will lower self-esteem.

However, Achievement Goal theory (Nicholls 1984) suggests that the type of motivation (ego or task) that drives children can be a significant factor in the level of effort and commitment they apply to a given task (Chechini et al. 2001). This external factor is not considered within the MELC (Howells et al., 2018), that could create significant differences in 'effort' between individuals and groups regardless of the other elements remaining fixed. Equally, Bandura (1977) argues that the relationship between levels of self-efficacy (self-esteem in this case) and levels of motivation (effort) is not so straight-forward. Self-efficacy can affect motivation to perform both negatively and positively. For example, those with lower self-efficacy may work harder to achieve for something, aware that this is essential

for them to succeed, whereas someone with high self-efficacy may not be quite so incentivised and prepare less well (Bandura 1977).

The criticisms certainly demonstrate clear flaws within this model. However, it is worth remembering that the MELC (Howells et al., 2018) was developed to support primary school teachers, many of whom are considered non-specialists when teaching PE and in particular, 'those who are at the beginning of their teaching career, who may not feel fully secure in their subject knowledge, understanding and skill' (Howells et al., 2018, p. xii). Thus, Howells et al. (2018) have sought to create an simple framework to support the teaching of PE that is underpinned by existing research and theory but which uses some generalised language and assumptions in an attempt to make model more accessible to the audience it is aimed at.

Indeed, there are many similarities between the MELC (Howells et al., 2018) and Csikszentmihalyi's State of Flow Model (2008). Consequently, a number of criticisms of that model can be applied to the MELC (Howells et al., 2018) can also be applied to the MELC (Howells et al., 2018). One of these criticism is that flow is an internalising 'state' and consequently it is hard to measure. As much as Csikszentmihalyi's work describes the state of flow, and the benefits and dynamics of this state, there is very little information on how to actually achieve it (Csikszentmihalyi, 2008). Nakamura and Csikszentmihalyi (2002) do suggest that one factor in achieving 'flow' is where personal skills match the required challenges. However, Howells et al., (2018) use the MELC to help guide teachers to define the learning that takes place at this point as well as other possible learning opportunities that may occur where these two factors are not aligned.

2.11 Individual Differences – age and gender

Sport England, (2019) reported that fewer girls enjoyed or were confident about doing physical activity and sport. 58% of boys claimed to enjoy physical activity whilst only 43% of girls felt the same. Additionally, 47% of boys felt confident compared to only 31% of girls. Much of the research into gender differences in confidence and competence in PE, however, relates to children in secondary

schools, where there are often very contrasting views. This highlights gaps in this, field of research, particularly in regard to primary aged children, which this thesis seeks to address. Van Dalen (2005) who also focussed on secondary aged girls in Canada to understand why so many were dropping out of PE. Her interview findings identified 'forced competition' (p.115) as one of the factors that demotivated girls.

Xiang et al. (2001) suggest that self-perception of ability, can be an influencing factor in the confidence and motivation of children in PE lessons. Even though he comments on how research has uncovered 'variances in both age and gender' (p.283), he also emphasises that evidence is still 'somewhat limited' (p.283). This thesis sets out to add to the fill this gap of research, through exploring the use of the MELC as a pedagogical tool. Xiang et al. (2001) suggests that younger age children tend to base their perceptions of ability (or competency) on effort and find it hard to distinguish between the two. As such, they can be guilty of overestimating their ability and being overly confident. Children between the ages of 8-12 become more aware that their ability to master a skill does not depend entirely on the effort applied. Thus, some may become disillusioned more rapidly when they find challenges tough, sensing that they no matter how hard they try they still cannot achieve success. Over twenty years later, many of the differences highlighted by the likes of Xiang et al. (2001) and Kirk (2005) are still evident within the recent Sport England survey, (2019). Part of the reason for this could be attributed to teachers who lack knowledge and understanding, and a lack of pedagogical 'tools' available to them to deliver effective lessons. The MELC (Howells et al., 2018) is an example of the sort of pedagogical model that could, therefore help address these shortcomings and, consequently this thesis considers the results collected relative to gender and age differences.

The next chapter will explore the research philosophy, design and the methods used within this study. It will justify the selected research approach and critique how and why the activities, participants and the settings were selected and used. Finally, the next chapter will explain how the data were collected and analysed.

CHAPTER THREE: Methodology

3.1 Research Questions

As discussed in the chapter two, the MELC (Howells et al., 2018) explores the relationship between the level of challenge offered within a competitive activity and the level of success achieved. The MELC proposes there is a CLZ when these two variables are in equity, but where an individual is required to sustain a reasonable amount of effort to achieve that success. This thesis will seek to apply these theoretical models into practice and assess the performance and engagement of children in environments where the (perceived) level of challenge is varied.

This thesis will analyse the practical delivery of these three types of competition (against, alongside or with others) in order to evaluate their impact on children's competence, confidence and enjoyment within PE lessons. By engaging children from both Year 2 and Year 6, this thesis was also able to investigate potential differences according to the age or gender of children. Therefore, this thesis sought answer two research questions:

1. How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

2. What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

3.2 Research Approach

Decisions regarding the most appropriate methods of research, relevant data collection and analysis that a piece of work is grounded in, is underpinned, by the researcher's philosophical stance in regards

to the nature of reality ('ontology') and their assumptions on what actually constitutes knowledge and, subsequently how it can be obtained ('epistemology'). Scotland (2012) states that 'it is impossible to engage in any form of research without committing (often implicitly) to ontological and epistemological positions' (p.10). This section will review the philosophical stance adopted by the researcher and explain how the research methods were grounded in those paradigms.

3.2.1 Ontology

Ontology in research can be defined as 'the study of being' (Crotty, 1998, p.10) and it deals with the nature of reality. Ontology is a system of beliefs that reflect an interpretation by an individual about what is reality; what constitutes a fact. It is associated with the philosophical question of whether social entities should be perceived as objective or constructive in nature. A researcher who adopts a ***realist*** ontological stance will perceive the truth to be scientific in nature, and, as such, only that which is tangible and evident to a person's senses are considered relevant and worthwhile. Consequently, all facts can be measured and quantified. This is the approach that underpinned this research, whereby the children's confidence, competence and enjoyment were measured and evaluated, in two PE lessons.

Social scientists, on the other hand will claim that all phenomena are directly influenced by the social environment in which they are situated, and as such is in a constant state of flux. They will seek to construct meanings from the social situations they find themselves in and use these to help develop an understanding of the broader social world (Thomas, 2017). This ***constructivist*** approach is the way by which social scientists; psychologists and sociologists, seek to interpret and understand the world. In evaluating how the introduction of competition affected the children's enjoyment of their lessons (through the post session two questionnaire), the researcher used a more constructivist stance. This allowed a greater understanding of how different children made sense of their world in regards to

exploring the relationship between enjoyment and performance – did children perform better when they were enjoying an activity or was enjoyment not linked to improved performance?

3.2.2 Positivist Epistemology

An individual's ontological views will often dictate their epistemological stance and how they believe knowledge can be uncovered. If ontology helps the researcher to understand what they are looking at, epistemology describes the ways in which the researcher will go about looking for it. If ontology questions the nature of reality, epistemology is concerned with how the reality is examined. (Thomas, 2017)

For positivists the social world can be viewed objectively and therefore can be studied and measured scientifically. Positivist methods for collecting data are scientific in nature; structured and controlled, with results and conclusions based on facts rather than subjective values (Thomas, 2017). Researchers who apply positivist approaches when working in schools perceive children as 'objective' and 'measurable' Greig et al. (2007, p.46) and this, therefore, allows them to apply quantitative methods for collecting and analysing results.

For positivists testing and measurement should be completely objective and, as such, the researcher's major role is to ensure the robustness and validity of the tests and the data collected. Their views and opinions will have no influence on the individuals being observed or the outcomes they achieve. Sparkes and Smith (2014) describe the positivist's role as that of a 'disinterested scientist' (p.10) when engaged in quantitative research. According to Bryman (2012) a positivist's epistemological stance is such that 'only phenomena and hence knowledge confirmed by the senses can genuinely be warranted as knowledge' (p.13)

The positivist's deductive approach to research is to develop tests to challenge a model or theory to explain how and why things happen (Jones, 2015). Focussing on facts and statistical analysis, positivist

researchers focus heavily on the reliability and validity of their work to ensure that the selected tests employed produce similar results under constant conditions on all occasions. Their view of the world is objective in nature and consequently they ground their research in quantitative methodology. This research was to 'apply' the MELC (Howells et al. 2018) in practice, which was designed to help teachers plan and deliver competition in PE lessons

Additionally, by analysing variables that are tangible and objective in nature, the researcher is able to control one variable and investigate the impact it has on other variables. For example, one aspect this research project sought to explore the impact on an individual's performance in a specific activity (measurable by the score generated in a set time) when they were set different target scores to achieve. Thus, the researcher sought to understand if an individual's 'score' changes when set different competitive targets.

According to Smith (2018) a positivist approach focuses more on the deductive and objective analysis of quantitative data collected using precise numerical measurement. Moreover, in this type of research methodology 'research questions tend to be based on theories that the researcher seeks to test' (p. 9) (as in section 3.1). This research was designed to investigate the practical application of the MELC (Howells et al., 2018) by observing the measurable, quantitative changes in children's competence, confidence and enjoyment when they were exposed to different levels of challenge and different pedagogical approaches to their delivery.

3.3 Experimental Research

This thesis was designed using an experimental research approach. Haerens and Tallir (in Armour and McDonald, 2012) claim that 'highly controlled 'true' experimental designs may be considered the gold standard of scientific research in the positivist paradigm' (p.150). They go on to argue that this approach is ideal when researchers seek investigate the 'causal effects of implementing pedagogical

models' (p.150), thus it was considered the ideal research strategy to investigate the impact of the MELC (Howells et al., 2018), as defined previously.

Experimental research is designed to enable the researcher to compare and contrast results in controlled environments and in doing so it helps them to understand the relationship between the cause of something and its subsequent effect. This is known as causality (Smith, 2018). As such, experimental research is designed to investigate the impact of one variable (the independent variable), often the intervention being investigated on another variable (the dependent variable).

Haerens and Tallir (in Armour and McDonald, 2012) describe three conditions that need to be met in order for experimental research to be considered 'true' (p.150). Firstly, the researcher needs to be able to manipulate the independent variable under investigation. In this research this was achieved when the researcher sought to investigate the impact of low, high or mid-level targets (the independent variable) on scores achieved in the three physical activity challenges (the dependent variable). Likewise, the different types of competition were assessed by evaluating the times achieved in the cup-stacking activities (dependent variable) when children were asked to compete *against*, *alongside* or *with* others (the independent variable).

Secondly, Haerens and Tallir (in Armour and McDonald, 2012) emphasise that the research must include a control or comparison group. In this research, this was achieved by working with schools that had a two-form entry system (whereby each year group contained enough children to have two separate classes). Thus, one class in each year group were considered the control group (the 'non-competition' group in this research) and the second class were the intervention group (the 'competition group').

Finally, true experimental research requires randomised controlled trials to take place, whereby groupings of individuals for testing are completely random. When selecting a group to undertake experimental research, Thomas (2017) highlights the importance of the researcher selecting a 'manageable sample which is representative of a larger population' (p.141). If the chosen sample truly

represents a 'microcosm of the population' (Bryman, 2012, p.168), then conclusions and generalisation drawn from the data collected from the sample can be applied to the whole target population. In order to make accurate assumptions from the sample it is important, therefore, that there is no selection bias in the sample choice (Thomas, 2017) and that the sample chosen is random in nature. Austin, (2016) however, does offer a note of caution here, regardless of how much a random sample is a true representative of the target population. As much as experimental research can be used to help teachers identify new approaches and strategies that can improve their teaching, Austin (2016) stresses that any conclusions drawn from this type of research needs to be 'applied with an understanding of the effects of local conditions and cultural sensitivity to individual pupils and groups' (p.12).

The target 'population' being investigated in this thesis were schoolchildren, in Year 2 and Year 6. By working with children from two different schools, as well providing a larger sample size, it created a more representative sample of the target population as a whole. The classes used in this research were created when the children joined the school at age five at which point no consideration was made with regards to, their physical or intellectual capability. Moreover, within each school the selection of which class became the competition group and which became the non-competition group was randomly selected by the researcher, whereby whichever class had their PE lesson first became the non-competition group.

3.4 Participants and Settings

Children from two state primary schools participated in the study. Both schools have above average numbers of children on roll; School A has 428 children and School B 283 compared to the national average of 260 (House of Commons Library, 2017). The children (198) were all children from Year 2 (aged 7 years) and Year 6 (aged 11 years) who attended both PE lessons. Neither school uses any

selection criteria based upon academic or physical ability and the two classes in each year group are heterogeneous in nature (Dyson and Casey, 2012).

Participant Numbers:	**Competition Group**	**Non-Competition Group**
Year 6	48	52
Year 2	50	47
Boys	50	51
Girls	48	48
Yr. 6 Boys	23	27
Yr. 6 Girls	25	25
Yr. 2 Boys	27	24
Yr. 2 Girls	23	23

Table 2: *Participant numbers*

Children who missed one or both sessions due to illness or attending additional musical instrument lessons during PE lessons still participated in the session, but their data is not analysed due to missing parts.

The schools used in this research were selected for several reasons. Both were recognised locally for their provision of PE and their commitment to school sport. Each has achieved the School Games Gold Award in recognition of their existing offering for PE and school sport. The respective PE coordinators are both schools are trained PE specialists and case studies presenting examples of best practice from both schools have recently been published in Howells et al., (2018).

Ofsted (2014) suggest that there is a direct link between the provision of high-quality PE and school sport and academic achievement, with the Chief Inspector of Schools, suggesting that 'schools that win on the field, win in the exam hall' (Ofsted, 2014, p.3). In terms of the standards of teaching and

learning, at the time of the research both participating schools had achieved outstanding status in their most recent Ofsted inspections; School A in November 2013, and School B in October 2012. These factors suggest that the children in both schools would have been experiencing to similar PE lessons and from staff with similarly high levels of expertise.

Nonetheless, when describing purposive sampling Jones, Brown and Holloway (2013) emphasise that 'sampling units are selected in line with the purpose of the research' (p.35). Consequently, both PE coordinators confirmed that children were familiar with the fundamental movement skills required for the running, jumping and catching and throwing activities, as well as the 3-3-3 and 3-6-3 stacking techniques, (including the use of timing mats), prior to the sessions being delivered.

3.4.1 Access and Scheduling

The year groups were selected because they represent the respective end of KS1 and KS2. By carrying out the research towards the very end of the school year (June 2018) enabled the planning of appropriate activities to consider the expected individual expected levels of attainment and development, NCPE (DfE., 2013). In addition, the activity challenges were selected partly because they provide benchmark scores created from a sample size of over 10,000 children (Fit for Sport, 2015). Therefore, enabling the researcher to ensure the target scores set were age appropriate based upon previous large-scale results.

In both schools the logistics of delivering the activities to the numbers of children concerned in a consistent time frame required the activities to be delivered in an outdoor setting and after both year groups had completed their Statutory Assessment Tests (SATs) to prevent inconsistent results due to potential increase levels of anxiety linked to the SATs. Thus, the timing of the research also had to consider potential disruption due to inclement weather. These risks were negated by delivering the

activities in the Summer term. Subsequently, the sessions took place on days when the weather was consistently good and had no noticeable impact on the delivery of the sessions.

By delivering the sessions in the first weeks of term 6 (immediately after the May half term break), the sessions did not interrupt the delivery of any existing unit of work. Children were familiar with starting new topics at the beginning of each half term, thus enabling these sessions to cause limited disruption to existing routines and ensuring that the researchers were not creating negative feelings amongst the children or the teachers.

3.5 Gaining Access - Gatekeepers

Holloway (1997) describes gatekeepers as the individuals who have the knowledge and authority to allow a researcher access to the setting and participants. For this thesis, the PE coordinator for the respective schools fulfilled the role of gatekeeper. Both were very familiar with the researcher; the two gatekeepers had both completed their own undergraduate degrees at Canterbury Christ Church University and had worked closely with the researcher on previous projects, including managing overseeing student placements. Nonetheless, additional permissions were sought and granted from the head teachers of both schools and the relevant safeguarding background checks were completed prior to the researcher being given permission to access either school.

Understanding the purpose and benefits of the research, as well as their logistical obligations and commitments ensures that the gatekeeper can support the process as much as possible (Singh, 2016). Therefore, once consent had been granted for the research from the head teacher and the participating staff, the researcher visited both schools to brief all the staff involved on what would happen during each session and what each person's roles and responsibilities.

Every effort was made to ensure that the setting for the research was familiar to that which the children considered as normal, and not an artificial or contrived situation that could have impacted

their level of performance (Thomas, 2017). The research took place during the children's regular scheduled PE lessons and on the school playgrounds where they were normally taught. Although the researcher led the activities, the person who regularly delivered their PE lesson was present, along with additional support staff who would normally attend. Moreover, (and another reason for the selection of these particular schools), the researcher was known by and familiar to the children from numerous previous visits to both schools to support the delivery of PE lessons and the extra-curricular sports programme. Jones, Brown and Holloway (2013) suggest that 'researchers who have gained entry and acceptance do not disturb the scene in the way that an occasional visit from an outsider might' (pp. 70-71). This familiarity helped to prevent as much as possible the Hawthorne Effect (Roethlisberger and Dickson, 1939) in which participants' effort and enthusiasm can potentially change due to their awareness of being part of an unusual situation and research rather than the result of any changes in pedagogy and practice. Jones, Brown and Holloway (2013), suggest that this familiarity allows for, effective research to take place as the researcher can be immersed within the culture they are observing and where they become an integral part of the setting they are observing.

3.6 Ethical Considerations

When designing any research consideration must be made to ensure that methods employed to undertake the research are morally ethical (Austin, 2016). Planning needs to consider that any research is carried out in such a way as to maintain the integrity of the process whilst safeguarding all those involved.

3.6.1 Consent

Consent refers to the formal approval of the management of any environment where research takes place and 'the agreement of people to take part in the study' (Thomas 2017, p.46). For this thesis the process began with an initial letter that was sent to each head teacher outlining the research proposal.

Also consent was sought from the individual class teachers and their support staff to ensure they were happy to be involved in the process of overseeing each of the activity stations.

Seeking direct and specific parental approval for any children involved in the research is not necessarily required if the activities undertaken are those that they might normally do within school (Austin, 2016). In this research, although the structure of the lesson was perhaps different than the children were used to, the research took place during the children's normal allocated PE lesson. The activities undertaken, (running, jumping, catching and throwing and cup-stacking), were selected on the basis that all the children were familiar with, and able to perform them, (albeit with differing levels of mastery), and that they occur within the schools' normal PE curriculum. As such, both head teachers felt that individual parental approval was not necessary.

However, Sparkes and Smith (2014) describe *informed consent* as the belief that any participants should have the freedom to opt in or out of any research based upon them being fully informed as to the nature and purpose of the research. Therefore, the researcher provided an information letter for both schools with contact details for the parents if they wanted more information and the option for their child's data not to be used within the research should they wish. (Appendix 6)

Austin (2016) suggests that many children enjoy 'becoming partners' (p.69) in the research process provided they are fully aware that the research is designed to help teachers understand better how children learn rather than being focussed specifically on them. Consequently, the children were informed of the purpose of the research and were given assurances that any data collected would not be used to reflect on any individual's performance (Appendix 7). It is one thing for children to be given the choice to *opt out,* should they wish, but as a teacher or equivalent adult the power relationship that exists can mean that some children may find it uncomfortable to actually make that choice should they wish to (Austin, 2016). To mitigate against this, the post session two questionnaires were distributed and facilitated in both schools by a teaching assistant whilst the children were getting changed, (when they might normally undertake a lesson reflection). However, the children had to

physically *opt in* to take part. The children who completed the questionnaires had to make an active choice to do so, thus signalling their willingness to participate in that aspect of the research (Thomas, 2017) (which they all did).

Nonetheless, 'ethics is not a static event but a continual process' (Sparkes and Smith, 2014, p.206). In addition to the detailed planning and consideration undertaken prior to any research, it is crucial that the researcher ensures that the welfare of all participants is safeguarded throughout the research process. For example, although the children were required to work in pairs to complete the different activities, where one class had an odd number of children adjustments were made to have one group of three working together. Moreover, to avoid any children feeling left out and 'worthless and unwanted' (Howells et al., 2018, p.170) the children were asked if any would like to form a group of three rather than a pair *before* the rest of the class chose their partners. To ensure reliability and consistency of the process, only the results collected from pairs who worked together over both sessions were included in the final data analysis. The group of three, as with any children who only attended one of the two sessions, were included in all aspects of the sessions, unaware that their results were withdrawn from full analysis at a later stage.

Other than the group of three the children worked in pairs taking it in turns to complete the various activities at each station. Howells et al. (2018) suggest that effective grouping is an important aspect of effective organisation of PE lessons. After much consideration, it was decided that children could choose their own partners based on friendships. Howells et al. (2018) suggest that this is the most appropriate approach to use when the group is unfamiliar to the teacher (or researcher in this case), or when the tasks undertaken are challenging and 'you want the children to feel confident, safe and secure' (p.163).

3.6.2 Anonymity

Ensuring that all participants remain anonymous and any information collected is held confidentially are further ethical considerations when designing a research project. Although the term anonymity generally means that the researcher should never name the site or any of the participants, Walford (2005) goes even further to suggest that the researcher should 'not include any information about any individual or research site that will enable the individual or research site to be identified by others' (p.85). Researchers using quantitative methods, where code numbers can be used to replace names (Bryman, 2012), can achieve this relatively easily. Prior to the children participating in session one their class teachers were asked to allocate each child a code number and to ensure that they wore a sticker displaying their number throughout both sessions. That way the scores collected at each activity station were allocated to a number rather than a name. (The class teachers kept a record of names and numbers).

3.6.3 Confidentiality - Data security and stewardship

Researchers have a responsibility to keep all data collected as part of the research safe and secure. Therefore, the data from the activity score sheets and completed paper questionnaires were converted into an electronic format. The stored electronic data was password protected and only the researcher had access to the password. At no point was any of the data shared with or passed onto third parties.

One ethical dilemma that was considered and discussed with both schools in the planning stage was the fact that the very design of the research meant that one class in each year group would be exposed to a different experience in session two than the other. If the introduction of different competitive strategies in session two produced significantly better results would that unfairly have benefitted one class whilst the other 'missed out'? As Thomas (2017) considers, 'is it justifiable to have a control group

if you feel the experimental group is getting something worthwhile?' (p.39). Austin (2016), however, suggests that this is something that is not unusual in teaching, whereby staff are constantly experimenting with new approaches. The experience a teacher gains from one year to the next means that each new class they teach gains the benefit from doing things in an improved way that the previous year's class may also have missed out on. These considerations were discussed with the PE coordinators and head teachers from both schools prior to the research taking place. However, both schools felt were happy with the two different sessions occurring.

3.7 Logistics

Session one generated base-line 'scores' for each pupil in each activity. In session two, the non-competition groups were taken through a repeat of the first session with new scores collected. The competition groups also repeated the same activities, however, with adjustments to the 'delivery', employing different types of competition and setting individual targets. For the running, jumping and throwing activities the competition group were set specific adjusted targets for each activity, based upon their previous session's score. This target was either 10% less than the previous score, the same score or a 10% increase on their previous score. The object was to observe if the inclusion of the targets had any impact on the level of improvement from session one to session two, and if so, which level of target created most improvements.

The physical activity challenges (as opposed to the cup-stacking activities) required the children to work at maximum capacity for a set period. For some children this could be quite physically demanding and consequently the rotation of stations was such that each physical activity challenge was followed by a cup-stacking station. Table 3 outlines the station rotations that were used for sessions one and two. Children started at one station and rotated around the circuit in numerical order when instructed to by the researcher (who also acted as the timekeeper). The adults at each station made a note of

which children started first at each station so that each pairing could follow the same rotation pattern in session two as they did in session one.

Session One	Session Two (Competition Group) *
1. Running Challenge	1. Running Challenge
2. Cup-Stacking 1	2. Cup-Stacking – 1v1 Duels (*Against*)
3. Jumping Challenge	3. Jumping Challenge
4. Cup-Stacking 2	4. Cup-Stacking – Beat your Best (*Alongside*)
5. Throw/ Catch Challenge	5. Throw/ Catch Challenge
6. Cup-Stacking 3	6. Cup-Stacking 3 – Team Relay (*With*)

*(In session two the non-competition group repeated session one)

Table 3: *Rotation of activity stations in sessions one and two.*

3.8 The Activities (1) - Fit for Sport Physical Activity Challenges

The activities selected for this part of the research were developed by the organisation 'Fit for Sport' as part of an Activity Challenge programme they have delivered to over 10,000 primary age children (Fit for Sport, 2015). The activities focus on running, jumping and throwing (see Appendix 8) and are considered to be three of the basic FMS that underpin all sporting activities (Gallahue and Ozmun, 2011) and link to the aims of the NCPE (DfE, 2013).

Figure 4: *Year 2 children competing in the 'Catching and Throwing' activity challenge.*

These 'tests' have been created specifically for school children, in conjunction with end of KS1 and KS2 targets and the fact that they have been used on over 10,000 children provides a level of validity that was considered extremely important for this research. The tests also provided a reliable test retest data they were also very simple to set up with limited equipment required and very easy to score. Additionally, each of the three tasks are differentiated to consider the different levels of physical development for children at age 6-7 years compared to children aged 10-11 years (see Appendix 8).

3.9 The Activities (2) – Cup-Stacking Challenges

The second part of the research was designed to investigate the impact that the use of the three different 'types' of competition suggested by Howells et al. (2018). Using cup-stacking activities enabled the collection accurate times via the use of timing mats, which record times to the nearest hundredth second and provided the opportunity to deliver similar, but appropriately differentiated challenges for children. Children in Year 2 undertook the 3-3-3 stack challenge (which required them to build three pyramids, each of three cups and then take them down in the quickest time possible). The Year 6 children were tasked with undertaking the more challenging 3-6-3 stack challenge. Each

child had three attempts at each of the three cup-stacking stations to complete the 3-3- or 3-6-3 stack as quickly as possible.

In session two for the competition group the sport stacking activities were adapted to simulate the three 'types' of competition that were being investigated. Once again, each child had three attempts at each station and generated a time for each. (See Figure 5-7)

Competition *Against* others - '1v1 Duels':

Children went 'head to head' in 1 vs 1 duels to see who could complete their stacking challenge first to win a point. (Best of three attempts)

Figure 5: *Competition Against others - '1v1 Duels'.*

Competition *Alongside* others – 'Beat your best':

Children had three attempts to beat their personal best time. Children worked in groups of four and started each attempt at the same time.

Figure 6: *Competition Alongside others – 'Beat your best'.*

Competition *With* others – 'Team Relay':

The two pairs working at each station were joined to form a group of four who subsequently worked together to complete a sport stacking relay. Each group had three attempts to improve on their previous score. (Staff recorded the team relay time as well as each child's individual time)

Figure 7: *Competition with others – 'Team Relay'.* (Note: In Figure 6 the fourth member of the group was taking the photograph)

3.10 Reliability

When designing experimental research Smith (2018) emphasises the importance of experimental control such that it 'will provide confidence that change to the outcome variable was not down to other variables' (p.65). To achieve this, researchers need to ensure that there are high levels of reliability and validity in their study (Thomas, 2017). The reliability of a research tool is considered by the extent to which it will produce consistent results on different occasions. Researchers can use three methods to consider the consistency of a research tool; over time (test-retest reliability), across items (internal consistency), and across different researchers (inter-rater reliability) (Drost, 2011).

In this thesis the same researcher delivered the all the sessions in both schools, thus inter-rater reliability was not achieved. Nonetheless, it was felt that the strategies that were put, in place to ensure reliability in the process would have enabled there to be consistency in delivery should a different researcher repeat the process at another time

Rosenthal and Rosnow (1991) highlight some limiting factors to consider when using the test-retest approach in terms of reliability. However, if the time between the two tests is too short the children' performance in the second test could be influenced by what they remember from the first test, for example. Equally, if the time between both tests were too long results may be impacted by maturation and therefore the results achieved could be attributed to factors other than the independent variable applied (Drost, 2011).

All groups undertaking session one in the same week, with session two following two weeks later, addressed these limitations. Scores were collected and recorded in session one for each of the activities, the adults on each activity station were specifically asked not to tell the children what their scores were so that the non-competition group would not have a specific target to aim for in session two. The space between sessions was purposefully set with the idea that in particular the control group who may have remembered their own scores would have forgotten them, but also close enough together, so that the any impact of maturation would be negligible.

One reason for the choosing the physical activities challenges used in this research was because they enabled the researcher to collect reliable and accurate scores in a manner that could be replicated on different days and at different locations. The 3-3-3 and 3-6-3 cup-stacking challenges were measured using individual electronic timing mats that are activated by touch. The timing mats ensure that there is a consistent approach to the way in which times are calculated and therefore supports the accuracy of the times collected. The children can only start the timers by having two hands on the timing mats and can only 'stop the clock' by placing two hands back on the mat at the end. Thus, all children started and finished the timing process in exactly the same manner. To ensure that all children would avoid errors that might occur in this process all children were given time to practice starting and stopping the timer before their first timed attempts.

The Fit for Sport (2015) running, jumping and throwing challenges are very simple to set up with limited equipment required and very easy to score. Consequently, the researcher was able to ensure that there was consistency in the way the activities were set up and scored across the different schools. Scoring involved counting the number of completed attempts with the adult at each station responsible for scoring. Fit for Sport (2015) have a dedicated web page to outline the concise and clear instructions, which provides the exact parameters by which each challenge should be set up, but it also includes links to video footage of examples of each test (see Appendix 8). As (at the time of writing) 10,000 children have completed these tests in different locations it gives them credibility in regards to their validity and reliability as an effective test to use with children.

Every effort was made to eradicate the impact of bias. Research bias describes personal beliefs that individuals may have that may influence how they feel about certain practices, which, in turn may impact the research (Austin, 2016). Therefore, the staff present at each activity station were asked only to explain the details of what was required and to outline how the scores would be collected. They were asked not to offer praise to ensure that the support was consistent. The potential negative impact that a lack of praise from staff may have had on the children's efforts was considered as a

potential limiting factor of this approach. Howells et al. (2018) certainly highlight the importance of praise and positivity in creating an engaging and 'irresistible' (p.67) experience for children. However, it was felt that to ensure consistency and to maintain a controlled environment, the adults should just give instructions during the activities.

Haerens and Tiller (in Armour and McDonald, 2012) describe observational bias as situations where the expectations of the researcher can 'consciously or unconsciously influence the outcomes' (p.155). To mitigate against any potential bias that may have influenced the children, the researcher took a more withdrawn role during the sessions, acting as the timekeeper for the physical activity challenges. This approach of acting as a timekeeper reflects Sparkes and Smith (2014) ideas that the researcher's role when engaged in quantitative research should be that of a 'disinterested scientist' (p.10).

3.11 Validity

Whereas the reliability of the research process is concerned with the degree to which the measurement produces consistent outcomes, the validity of a research process relates to the extent that the tools used measure what they should (Thomas, 2017).

3.11.1 Internal Validity.

Experimental research allows the researcher to investigate existing models and theories, such as the MELC (Howells et al., 2018). In doing so the researcher will often test the theory or model by investigating the impact of manipulating one (independent) variable on other (dependent) variables. The researcher will then look to evaluate any meaningful changes that occur (Smith, 2018). In this thesis the researcher sought to deliberately manipulate the level and types of competition used with one group of children (the competition group) and compare their results with another group of children (the non-competition group) who have not been exposed to the manipulations. In doing so,

a key element for the researcher is to ensure that all other aspects of the situations for both groups remains constant and therefore valid. This will enable the researcher to 'establish whether a meaningful effect caused by the treatment (application of competition) impacts on those involved in the research' (Smith, 2018, pp.67-68).

Internal validity of the research process will give the researcher the level of confidence that the results achieved can be reliably attributed directly to the changes they introduced. In this thesis, a number of strategies were introduced, to give the process high levels of internal validity. This was particularly important because testing took place on two different sites with the sessions delivered over a two-week period. Haerens and Tiller, (in Armour and McDonald, 2012) highlight the challenges of dealing with 'unchangeable factors' unique to each school location, '…such as the available space in the playground' (p.159). Where possible all considerations were made to replicate the organisation of the sessions across the different schools and that there was consistency in the delivery of the activities. The sessions took place in the timetabled PE lesson for each class, thus ensuring that session one and session two took place at the same time on the same day. The researcher ensured that the same equipment was used for all sessions and took personal responsibility for organising each station, ensuring the distances for the running, jumping and throwing activities were carefully measured in alignment with the Fit for Sport (2015) guidelines.

3.11.2 External Validity

In comparison to internal validity, which is concerned with ensuring the results of a research measure, can be directly attributed to the impact of changes introduced, the external validity of a research process is the extent to which the researcher is able to generalise the results of a study and apply them to a broader group or place.

Selection bias is something that could negatively affect the external validity of the research process. This can occur if the selection of the participants is not considered representative of the full population (Thomas, 2017). However, in using *all* of the children in the data collection from the two participating

year groups (providing they attended both sessions), and in using children from two different schools was considered enough to suggest that it was purposeful sampling.

3.12 Data Collection and Analysis

For both the Fit for Sport (2015) Challenges and the Cup Stacking Challenges the scores of the children's performances were recorded in session one and session two. The data was analysed for how the children improved, regressed or remained unchanged. Austin (2016) suggests that percentages are the most appropriate measure to use when comparing 'between 35 and 100 subjects' (participants) (p.62). Thus, to evaluate the impact of individual targets, scores were calculated for the percentage of children in each group whose raw scores in session two either improved, regressed or remained unchanged. By comparing the different percentages, it allowed the researcher to analyse the introduction of targets on the competition group, or the lack of targets on the non-competition group. The results were evaluated again focussing on what percentage of children (Austin, 2016) produced their best overall time in each of three types of competition. By comparing and contrasting results the researcher was able to analyse which type of competition produced the highest percentage of children recording their best individual time and consequently, which type of competition fostered the most improvement.

3.12.1 Questionnaire to Solicit Enjoyment

To gather this data each child was given the opportunity to complete a short questionnaire once back in their classroom whilst getting change, after the completion of session two. The fact that questionnaires are 'detached and formal' (Austin, 2016, p.73) helps address any bias that may be created through interviews in regards to the power relationship between the child and the adult undertaking the questionnaire. In these situations, the child's wish to please the adult (or at the very least provide answers that they feel the teacher would want them to offer) may skew the responses they give in regards to their true feelings (Austin, 2016). To address any potential bias prior to the

questionnaire being completed, the researcher emphasised to all children that there were no right or wrong answers. In order to achieve true answers, it is important that children are comfortable giving honest answers without fear of letting others down or getting into trouble (Austin, 2016).

Nonetheless, when working with younger children care and consideration needs to be made when choosing the appropriate language to use in questionnaires to solicit valid responses. With the youngest children in the research potentially still being only six years old, each of the questions were supported by iconographic images to represent the running, jumping and catching/throwing activities. The children were required to underline which they enjoyed most and least. Thomas (2017) claims that image-based approaches to data collection provide a 'powerful extension' to more traditional methods and that they can be 'particularly useful for children, with whom it is often difficult to engage if you limit yourself to words' (p.232). In this case, it also ensured children who may still be developing their reading skills could recognise a visual representation of the activity.

King and Horrocks (2010) caution, that 'feelings questions' (p.36) must be structured in such a way that the research children are completely clear about what is being asked. Austin (2016) suggests that when working with young children this may be achieved, by using closed questions, and this approach is particularly useful, in so much as it enables the researcher to interpret quantifiable data from the responses. The questionnaire used in this research used both open and closed questions. However, due to word count limits for this thesis, only the quantifiable data from the closed questions regarding which activity they enjoyed most and least was analysed was used. (See Appendix 9 for the questionnaire).

3.12.2 The use of numbered tokens to solicit confidence in achieving targets

The use of images to support understanding, and to help build engagement in the data collection process was also applied when gathering data on the children's level of confidence in their ability to

achieve the targets set for them in the running, jumping and throwing physical activity challenges. The research sought to analyse levels of confidence amongst the competition group based upon the low, mid or high-level targets that were set for them from their scores in session one.

On arrival at each of the three physical activity challenge stations the adult responsible for overseeing the activity recording scores told everyone their specific target and gave them a small plastic token and wrote their unique number on it. The individual was then required to deposit the token in one of two boxes based upon whether they felt confident that they would be able to achieve the target set for them before they attempted the activity (see Figure 8).

Figure 8: *Tokens and collection boxes used to garner individual confidence*

3.13 Answering the research questions

To analyse the data collected from the activity sessions, each of the two key research questions were broken down into sub-questions. These allowed for greater and more detailed analysis of the results.

3.18.1 How can competition foster improvement in competence in Physical Education lessons?

The following sub-questions relate specifically to the analysis of results from the running, jumping and catching/ throwing physical activity challenges.

Does the introduction of competitive targets support improved competence?

By comparing the percentage of children who improved, regressed or remained unchanged in the competition group with the corresponding scores from the non-competition group the researcher was able to investigate how the introduction of competitive targets affected children's competence performing the physical activity challenges.

At what level of challenge do children perform best in?

By comparing the percentage of children in the competition group who scores either improved, regressed or remained unchanged across the three different physical activity challenges the researcher was able to analyse how the different levels of targets influenced competence.

To what extent does 'confidence to succeed' impact success?

By analysing which boxes the children deposited their confidence tokens in, illustrated the impact of different levels of targets on the children's confidence of achieving the set targets.

Do these results differ for children of different ages or genders?

By filtering the results, any differences in the percentage of children who improved, regressed or remained unchanged in session two within the three physical activity challenges across the following sub-groups could be analysed:

- Year 6
- Year 2
- Boys
- Girls
- Boys Year 6
- Boys Year 2
- Girls Year 6
- Girls Year 2

3.18.2 What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons?

The following sub-questions relate specifically to the collation and analysis of results from the introduction of the three types of competition used to deliver the cup-stacking challenges – competing *with*, *alongside* and *against* others.

In which 'type' of competition do children produce their best performances?

To analyse which type of competition children produced their best performances, results from session two amongst the competition group were analysed and the type of competition where the highest percentage of children produced their best cup-stacking time identified.

Which type of competition do children enjoy most or least taking part in?

This data was analysed for competition preference type from the questionnaires of children in the competition group.

Do children perform best in the type of competition they enjoy the most or that which they least enjoy?

The results from the type of competition the children identified as their most or least enjoyable were compared with the type of competition they produced their best times to investigate if these two factors are linked.

Do these results differ for children of different ages or genders?

As in earlier analysis, the data were examined according to gender and age groups to investigate differences and similarities.

CHAPTER FOUR: Results

4.0 Results Collation

The results will be presented according to the two research questions and sub-questions as posed in chapter three.

Part 1: How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

I. *Does the introduction of competitive targets support improved competence?*
II. *At what level of challenge do children perform best in?*
III. *Do these results differ for children of different ages or genders?*
IV. *To what extent does 'confidence to succeed' impact success?*

Part 2: What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

I. *In which 'type' of competition do children produce their best performances*
II. *Which type of competition do children enjoy most or least taking part in?*
III. *Do children perform best in the type of competition they enjoy the most or that which they least enjoy?*
IV. *Do these results differ for children of different ages or genders?*

4.1 Results (Part 1): How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

4.1 Results (Part 1): How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

All of the figures referenced in this chapter (Figure 9 – Figure 26) can be found in Appendix 7.

4.1.1 *Does the introduction of competitive targets support improve competence?*

Figures 9 and 10 show the percentage of children whose scores improved, regressed or remained unchanged from the scores they achieved within the same challenges in session one.

- **Improvement - Competition Group:** In all three challenges *most* of the children improved their scores when they were set specific targets to achieve: (Running; 62%, Jumping; 59.2% and Throwing; 75.5%).
- **Regression - Competition Group:** In all three challenges the percentage of children whose scores regressed in session two (when they were set specific targets to achieve) was far lower than the percentage who's scored improved. (Running; 26.5 %, Jumping; 36.7 % and Throwing; 21.4%). These figures were also far lower than the comparative scores from the non-competition group.
- **Improvement - Non-Competition Group:** The percentage of children who improved when there were no targets set was lower than in the competition group across all three challenges. (Running; 24.2%, Jumping; 49.5% and Throwing; 49.5.5%).
- **Regression - Non-Competition Group:** The percentage of children who regressed when there were no targets set was higher than the comparative regression scores from the competition group across all three challenges; (Running; 52.5 %, Jumping; 41.4% and Throwing; 38.4%). Moreover, the difference between the percentage of children who improved and those who regressed was far lower in the non-competition group. Indeed, in the running challenge more than twice as many children regressed (52.5%) than improved (24.2%) in session two. This was the reverse, of what happened to, the competition group, where 62.2% of the children improved and only 26% of children regressed.
- **No Change –** The percentage of children whose scores neither improved nor regressed in session two was far lower amongst children in the competition group than in the non-competition group; running challenge 11.2% (competition group) compared to 23.2% (non-

competition group); jumping, 4.1% compared to 9.1%; and throwing, 3.1% compared to 12.1%. The fact that less than half as many children in the competition recorded the same scores across both sessions in comparison to the non-competition group would tend to reinforce the findings from the previous results, in suggesting that the introduction of competitive targets had an impact on performance.

Overall, these results indicate that the introduction of competitive targets improved performance regardless of what that target was. In addition, the results suggest that where competition was not used competence levels regressed, highlighting the importance of using targets in competition for improved competence amongst this particular group of children.

4.1.2 *At what level of challenge do children perform best in?*

The results overall indicate that mid-level targets (where scores from session one were unchanged) are the level that children performed best in. Figures 9 and 10 show that a higher percentage of children in the competition group improved in all three challenges when compared to the corresponding scores in the non-competition group.

- The most improvement was evident in the scores for the catching/throwing challenge where children were asked to achieve the same score as in the previous session (classed in this thesis as mid-level targets). In this activity 75.5% of the children recorded improved scores in session two, compared with 62.2% in the running challenge (low targets) and 59.2% in the jumping challenge (high targets).
- The challenge where there was the greatest difference between the percentages of children improving in the competition group compared to the same activity in the non-competition group was the running challenge, where low targets were set. In this challenge, there was a

difference of 38% between the percentage of children who improved in the competition group (62.2%) and the percentage of children who improved in the non-competition group (24.2%).

- This is compared to a difference of 26% difference in the throwing challenge between the competition and no-competition groups and only 9.7% difference in improvements in the jumping challenge.
- This suggests that the introduction of lower competitive targets also has a positive impact on improving competence amongst the competition group.
- The jumping challenge was where the highest percentage of children produced lower scores in the competition group, in session two when set competitive targets. (Scores from more than one third (36.7%) of the children in the competition group regressed in session two for the jumping challenge).
- This (perhaps, unsurprisingly) was the challenge where the targets in session two were set at the highest; an increase of 10% on everyone's session one score) (see Figures 9 and 10).

4.1.3 *Do the results differ for children of different ages or genders?*

Figures 11-13 demonstrate the percentage of children whose scores ***improved*** in session two across each of the three physical activity challenges. They are separated into sub-groups, based upon the age and gender of the children.

- Figures 11-13 show that a higher percentage of children in the competition group improved in all three challenges when compared to the corresponding scores in the non-competition group, (with one exception), regardless of gender or age.
- The most improvement was evident in the scores for the competition group in the throwing challenge (where mid-level targets were set) (see Figure 13). The Year 6 boys appear to have responded most positively to this level of target with 82.6% improving their scores in session 2, compared to only 48.1% of Year 6 boys in the non-competition group.

- The challenge where there was the greatest difference between the scores generated by children is the competition group compared to those in the non-competition group, however, was the running challenge, where low targets were set. In particular, 74.1% of the Year 2 boys in the competition group improved in this challenge (when set low targets), compared to only 25% of Year 2 boys in the non-competition group; a difference of 49.1%.

Figures 14-16 demonstrate the percentage of children whose scores ***regressed*** in session 2 across each of the three physical activity challenges. They are separated into sub-groups, based upon the age and gender of the children. By analysing the data for regression, in understanding what happens where there is a lack of competition, in particular, helps to understand the potential benefits of competition for different ages and gender.

- The percentage of children whose scores regressed in session 2 was consistently higher amongst children in the non-competition group, regardless of the activity challenge, or the age/ gender sub-group they belong to.
- The only exception was in the Jumping challenge where a higher percentage of Year 2 girls in the competition group regressed compared to the Year 2 girls in the non-competition group.
- The running challenge saw the greatest differences between the regression scores of the competition and non-competition groups. In particular, 35.4% more of Year 2 children in non-competition group regressed than their peers in the competition groups.

Once again, the results suggest competition is needed to help children improve (regardless of age or gender). As discussed previously, when targets are high the impact of competition is less evident and although a higher percentage of children improved when the targets were mid-level (no change), there was a greater difference between the rates of improvement between the competition and non-competition groups when the targets were low. However, it is important to note that individual differences listed above may also provide guidance for teachers when considering ways they may differentiate their lessons or teach classes from different year groups.

4.1.4 *To what extent does 'confidence to succeed' impact success?*

- Figure 17 indicates that the children were most confident and successful in the running challenge (where they had lower targets), with 52% confident they would achieve success and did so, 28.6% were confident but failed to reach their target and only 18.4% of the children predicted they would not achieve their target.
- Conversely, only 23.5% of children were confident and successful in achieving the higher targets set for the jumping challenge. A further 17.3% of children were confident of succeeding but failed to hit targets whilst the large majority, 59.2%, lacked confidence in their ability to succeed.
- Finally, in the throwing challenge with a no change, mid-level target, 49% of children were both confident and successful, 19.4% were confident but unsuccessful and 32.6% expressed a lack of confidence in achieving the targets set for them.
- To further explore, the relationship between confidence and success in achieving targets the results were analysed according to gender (see Figure 18).

Age and Gender Differences

- Figure 18 indicates that the boys displayed more confidence to achieve success across all three challenges (84% for the running challenge, 60% for the jumping challenge and 72% for the throwing challenge) compared to the girls (77.1%, 20.9% and 64.6% respectively).
- The biggest differences between the two genders are in in the jumping challenge where the impact of high targets, resulted in 79.1% of the girls expressing a lack of confidence in their ability to achieve those targets. This figure was almost double that of the equivalent score for boys (40%).
- Figure19 shows only 4.3% of Year 6 boys felt that they would not achieve the targets in the running challenge (low targets) compared to 28% of the girls in the same year.

- Likewise, in the jumping challenge, (where targets were high), high percentages of both of the girl's groups appeared to have lacked confidence; (Year 2, 65.2% and Year 6, 92%).
- Indeed, the scores of the Year 6 girls suggest that they were least confident to achieve their set targets in all three challenges.

4.2 What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

4.2.1 ***In which 'type' of competition do children produce their best performances?***

The focus for this analysis is the competition group, to evaluate changes in competence, confidence and enjoyment of children with variances in the type of competition used.

- The results in Figure 20 illustrate that 49% of children in the competition group achieved their best time when competing *alongside* others in the cup-stacking activities. 33.7% produced their best time when competing *against* others, and 17.3% achieved their best time when competing *with* others.

Figure 21 presents further analysis of this data to see if there these results differ for children of different ages and gender.

- In Figure 21 every sub-group consistently shows that the highest percentage of children recorded their best time when they were competing alongside others, followed by when they were competing against others, with the lowest percentage of children recording their best time when competing with others.
- These results would suggest that when trying to develop competence in their PE lessons, teachers might consider using competition alongside others as the most appropriate type of competition to use.

- Interestingly the results showed that the often perceived 'traditional' view of competition, (the rivalry definition that Siedentop and Van der Mars (2016) discuss), competition against others, produced worse results than competition alongside others in every sub-group for these children.
- In this type the sub-group who had the highest percentage of children achieve their best time was the Year 2 boys (37%), with the lowest percentage of children achieving their best time coming from the Year 6 boys (30.4%).

4.2.2 *Which type of competition do children enjoy most or least taking part in?*

How do you feel? (post session 2)	**Overall**	**Boys**	**Girls**	**Year 6**	**Year 2**	**Yr. 6 Boys**	**Yr. 6 Girls**	**Yr. 2 Boys**	**Yr. 2 Girls**
Competition Group	4.5	4.6	4.3	4.3	4.8	4.7	3.9	4.7	4.7
Non-Competition Group	4.0	4.2	3.8	3.6	4.4	3.9	3.2	4.5	4.3

Table 4: *Gauging children's feelings of enjoyment after the completion of session two (average scores out of 5)*

- Table 4 demonstrates that children in the competition group felt more positive after session two than their peers in the non-competition group.
- Thus, it could be proposed that, the use of competition as a pedagogical tool within session two served to make the session more enjoyable.
- The results were consistently higher amongst the competition group, regardless of age or gender differences, although there were differences in *how much* more enjoyable some of the sub-groups found session two.
- These results suggest that Year 6 children (and Year 6 boys, in particular), enjoyed the introduction of competition most.

- Equally, the lowest scoring sub-group in the non-competition group was Year 6 girls whose average score was only 3.2.
- However, the increase in average scores amongst the Year 6 girls in the competition group was much higher (3.9), suggesting that planning for, and delivering appropriate competition may be a tool that teachers might consider using to engage more Year 6 girls in PE. As such, understanding what type of competition the children enjoy most could help teachers plan the most appropriate approach to use.

At the completion of session two, children in the competition group were asked, to choose which of the three types of competition they enjoyed most, and which they enjoyed least. The following section will present the results of those choices and compare how they relate to the types of competition that they *actually* performed best in.

- Figure 22 shows that the most popular type of competition was competition *against* others with 55.1% of children making that choice, whereas 28.6% of the children enjoyed competing *with* others most.
- Competing *alongside* has the lowest scores, with only 16.3% of children selecting that type of competition.
- Conversely, competing *alongside* others was the type of competition children selected as their least favourite (52%), followed by competition *with* others (33.7%), with only 14.3% of children choosing competition *against* others as their least favourite.

Figures 23 and 24 filter the most and least enjoyable types of competition by age and gender sub-groups. With the exception of the Year 2 girls, the results are consistent with those found in Figure 22.

- The Year 2 girls were the most varied in their responses. Their scores for the most enjoyable were split predominantly between competition with others (43.5%) and against (34.8%) whilst the scores for least enjoyable were spread predominantly between competition alongside (47.8%) and with others (39.1%).

- This could suggest, therefore that perhaps, a variety of types of competition is needed when teaching Year 2 girls. At the very least Year 2 girls would appear to respond better to when given the opportunity to compete with other girls, whereas the Year 2 boys appear to prefer to compete against others.

4.2.3 *Do children perform best in the type of competition they enjoy the most or that which they least enjoy?*

- Figure 25 indicates that the type of activity that the highest percentage of children achieved their best scores in; competing *alongside* others (49%), was the activity that the *lowest* percentage of children expressed was their most enjoyable type of competition (16.3%).
- Likewise, only 33.7% of the children achieved their best score in the type of competition selected as the most enjoyable; competing *against* others.
- These results would tend to suggest that the children's decision-making when choosing their most enjoyable type of competition may not have necessarily be driven by whether they had produced their best times or scores in that activity.

4.2.4 *Do these results differ for children of different ages or genders?*

- Figure 26 demonstrates that Year 6 Boys achieved their best results in the type of competition that they suggested was least enjoyable (37.8%) than the percentage who scored their best time in their most enjoyable type of competition (17.9%).
- This was the opposite to the Year 6 girls for whom 48.9% achieved their best time in their most enjoyable type of competition whilst a lower score of 39.3% of the Year 6 girls achieved best times in their least enjoyable type of competition.

The answer to the sub-questions: 'do children perform best in the type of competition they enjoy the most or that which they least enjoy?' The data showed an unexpected result, in that there is not a link

between the level of enjoyment in the activity and level of performance and competence in the activity. This could potentially suggest that children do not perceive how successful they are, as a criterion, by which they assess their enjoyment of an activity. Alternatively, it could mean that they do value 'success' as a criterion for gauging their level of enjoyment, but their perception of 'success' may not necessarily relate to improved competence. For example, a child may have claimed they enjoyed competing against others most because they won their one versus duel against their partners, even though they produced their fastest time when competing alongside others.

CHAPTER FIVE: Discussion

5.0 Introduction

In this chapter the results will be discussed in regards to the two research questions and the subsequent sub-questions highlighted at the end of chapter three. It will consider how the findings from this field-based purposeful study relate to the claims of Howells et al. (2018) in regards to the existence of the CLZ within the MELC (Howells et al., 2018) as well as analysing the effect the three types of competition; *against*, *alongside* and *with* had on the competence, confidence and enjoyment of the children within this study.

Aggerholm et al. (2018) highlight the role that competition plays in organised youth sporting environments, but challenge whether the use of competition in PE is 'incompatible with the educational context' (p.385). In doing so they offer four contrasting arguments surrounding the use competition:

- whether teachers should ***avoid*** competition completely;
- whether teachers should ***ask*** children and give them greater choice to opt in to competition and at what level;
- whether teachers may ***adapt*** the competition they deliver to ensure greater inclusion and equality of experiences;
- whether teachers simply ***accept*** that there are positive and negative experiences related to competition, but appreciate that PE has a role in helping children learn about these and to discover their own preferences.

This chapter will discuss the findings from the research in regards to each of Aggerholm et al.'s (2018) ideas, to help further knowledge and understanding of these concepts.

Since completing the data collection, new research has been published by Sport England (2019), focussing on the attitudes of over 130,000 children aged 7-16 towards physical activity and sport. The

research was designed to understand children's attitudes to the five factors that define physical literacy amongst children: enjoyment; confidence; competence; understanding and knowledge (Sport England, 2019). (For the purposes of the survey Sport England take the definition of physical literacy from the website of the International Physical Literacy Association (2016), whereby 'physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life'). The report not only highlights the impact that confidence and enjoyment can make on engagement with physical activity, but the results also highlight some interesting differences between age and gender groups. Comparisons between these findings and the results from this research will also form part of the following discussions.

Finally, most recently in September 2019, the Youth Sport Trust (YST) published a resource guide to encourage teachers to 'reframe competition'. Using evidence from research by the YST (2018b), Sport England (2019) and the Chance to Shine charity (2014), the resource is designed to help teachers think about 'alternative ways to deliver competition to engage more young people' (YST, 2019, p.1). Although the resource is designed more for teachers and School Games Organisers who are coordinating sporting competitions outside of curriculum time, their first key principle of competition is that children's 'motivation, competence and confidence are at the centre of competition' (p3). As this aligns closely with the objectives of this research, this chapter will also reflect on some of the eight key themes that the YST present in relation to the findings from this research.

5.1 How can competition foster improvements in competence in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

5.1.1 Does the introduction of competitive targets support improved competence?

The results from this group of children positively supports the claim that the introduction of competitive targets may develop improved competence in children. The results indicate that a higher

percentage of children improved in the sessions when competitive targets were introduced (regardless of what those targets were). Equally, where targets were NOT introduced, competence levels regressed in a far higher percentage of children than in the sessions where competitive targets were used.

Unfortunately, however, the impact of competition is not always perceived, in the same positive light that these results suggest that it should. Torres and Hagar (2007) cite reforms introduced by the US National Alliance for Youth Sport, designed to deemphasise competition, as an example of this negativity. The reforms introduced include the removal of mechanisms to collate scores and create league tables amongst younger performers, along with the remit for coaches to deemphasise standings when results are recorded to 'provide an opportunity for meaningful play'. (Torres and Hagar, 2007, p.195). Similar approaches were subsequently, adopted by the English Football Association (FA, 2015).

Torres and Hager (2007) claim that these reforms are misdirected and reflect attitudes that are misinformed. They argue that people view competition in youth sport as having one of two purposes, (which align consistently with many of the views discussed in chapter 2). The first shares the ideal that competition serves simply to determine winners and losers; the 'zero-sum' mentality that was discussed previously. The second way that Torres and Hager (2007) believe competition is viewed is more fitting with the concept of true competition (Shields and Funk, 2011) whereby a 'mutualist' approach 'focuses on the determination and construction of excellence in sport' (p.195). Adopting philosophies that place *less* emphasis on competition in response to the negative aspects of decompetition (Shields and Funk, 2011), is actually 'incompatible' with the mutualist approach and does not actually serve in the best interests of children's needs (Torres and Hagar, 2007).

If these two views of the value of competition are to be accepted, removing mechanisms to grade performance can be detrimental to both. Those who adopt the zero-sum approach and seek to 'win' above all else are described by Torres and Hager (2007) as 'outcome seekers' (p195). They will often

ascertain who performed 'best' regardless of whether official scores were kept or not. Alternatively, 'resolution seekers', adopt a more mutualist approach to competition and 'embrace contests as sites in which athletic excellence is manifested through the opponent's mutual efforts to meet their challenge' (Torres and Hager, 2007, p.199). By removing scoring mechanisms, it eliminates their ability to gauge their progress. In both cases, the shift towards less measurable (and comparable) competitive environments could actually lead to reduced engagement in the process. The results from this research appear to support the views of Torres and Hager (2007). The lower rates of improvement, coupled with far higher rates of regression amongst the non-competition group when compared to the competition group, could be attributed to the lack of any competitive targets that were set for them. Quite simply put, these results suggest that competition may be *required* within PE lessons to support improvements in physical competence.

Although, there is clearly relevance in the work of Torres and Hager (2007) in understanding different views on competition, their research is based on organised youth sport in the US and not directed primary PE lessons in the UK. Aggerholm et al., (2018) help to clarify some of the key contextual differences between PE, which takes place during curriculum time, and youth sports, which is organised outside of school hours. It is important to understand these differences, when teachers consider the value and importance of competition when planning their PE lessons.

Firstly, children choose to play organised sport; participation is voluntary. PE lessons, on the other hand are compulsory and children are required to participate whether they want to or not. Therefore, teachers need to cater for different levels of enthusiasm and engagement from the outset. Moreover, Aggerholm et al., (2018) suggest that due to the structure of different leagues and graded competition, organised youth sport generally enables children of equal abilities to compete together, whereas the groups in typical primary PE lessons are heterogeneous (Aggerholm et al., 2018). Finally, whether it is philosophically correct or not, organised youth sport generally adheres to the zero-sum view in so much that is designed to allow one individual or team to excel over others. Although there are many

mutual benefits from winning and losing, (as has been discussed previously) organised sport normally only perceives there to be only one 'winner', a view often reinforced by parents and coaches. PE lessons should be designed, however, to enable all participants to excel. 'It is the degree to which the individual has attained the competency aim that determines her grade…rather than comparison between students, the success of one should not exclude others from excelling' (Aggerholm et al., 2018, p.389). The fact that PE lessons are very different from extra-curricular school sport, yet limited research and guidance exists to support teachers in primary schools, highlights the relevance of this research.

In terms of answering the research question; 'how can competition foster improvement in competence in PE lessons' the results from this sample of Year 2 and Year 6 children suggest that the implementation of targets has had a positive impact on the competence of the children in the competition group. The following section will discuss in more detail the impact of the different levels of targets and how these relate to the CLZ, within the MELC (Howells et al., 2018). However, the fact that each target, (the 'competency aim' that Aggerholm et al. (2018, p.389) mention), was unique to each individual, based upon their previous performance, enabled each person to aspire for success regardless of what others achieved.

The extent to which the individualisation of the targets is critically important is something that may be considered in future research. Certainly, Ni Chróinín et al. (2018) suggest that the most meaningful PE lessons contain learning that is personally relevant to each individual. This could be achieved through teachers creating individualised targets for their pupils. Aggerholm et al. (2018) go even further by suggesting that children who are given greater *choice* and *autonomy* in selecting the level and type of competition they undertake will be more motivated and engaged in PE. This concept will be discussed later in this chapter.

5.1.2 At what level of challenge do children perform best in?

When considering the most effective level of competition for children to learn in, Howells et al., (2018) emphasise the need to balance the level of challenge for children, with the amount of effort required, alongside their perceived chances of succeeding. They propose that competition is most effective when:

> 'the challenge posed by the task or opponent is such that the individuals have the ability to 'succeed'…but are required to work hard and apply themselves in order to achieve that success.' (Howells et al., 2018, p.43)

This point of equity is described as the CLZ and the results from this research would appear to acknowledge its existence within the group of children studied. Of the three levels of targets that the children were set, the mid-level target would appear to align with the description of the CLZ from the quote above. This was the target where the highest percentage of children demonstrated improved scores in session two (75.5% improvement compared to 62.2% and 59.2% for the activities with the low and high targets respectively).

The mid-level (no change) target was set at the exact score the children achieved in session one. The children certainly would have felt they 'have the ability to succeed' in this activity, as they had achieved the same score in the previous session, but equally would need to 'work hard and apply themselves' in order to beat their target in session two (Howells et al., 2018, p.43). Conversely, in the activity with a high target (set at 10% more than their previous best), some may have doubted their ability to succeed. Likewise, others may have felt that the low target (10% lower than their previous score) would not have required the same level of effort and application.

The idea of a CLZ aligns with the theory of 'flow' developed by Csikszentmihalyi, (2008) and more recently the concept of challenge that is 'just right' (Ni Chróinín et al., 2018) (see chapter two). From these results it would appear that, amongst the children in this study, 'just right' equates to a child's

previous best score/performance, and, as such would also concur with the NCPE at KS2, which states that children should 'demonstrate improvement to achieve their personal best' (DfE, 2013, p.156).

Moreover, according to the MELC (Howells et al., 2018), when the challenge is too easy and success is achieved with minimal effort, limited learning takes place and often the more-able performers (in particular) lose focus, become easily distracted and ultimately disengaged. (This was illustrated by the fact that the more children improved when set mid-level targets than low targets; perhaps the challenge was insufficient to engage them all). Likewise, if the level of challenge is too high, whereby children are required to apply considerable amounts of effort, but achieve little success in return, they will become quickly disillusioned and, become disengaged. Again, this was illustrated, by the fact that a high number of children in this study demonstrated a lack confidence to achieve the high targets (Figure 17) and also that fewer children's scores improved when they were set high targets (compared to the low and mid-level targets). By comparison, either side of the 'flow' zone in Csikszentmihalyi's (2008) model describes participants becoming bored (if the perceived challenge is too easy) or anxious (if the challenge is too hard).

It is in this area that the MELC differs from Csikszentmihalyi's (2008) flow model (Appendix 4). Howells et al. (2018), also offer some of the positive applications of learning that takes place outside of their CLZ. For example, pitching competition at a level for which children achieve success with limited effort can be useful in creating positive experiences that help to build confidence, particularly when children are unfamiliar with an activity. Likewise, Howells et al. (2018) suggest that setting competitive tasks for which the chances of success are limited, even with high levels effort and application, can have the benefit of helping children to develop 'determination and resilience' (p.43).

This application of theory may help explain the differences in results in Figures 9 and 10. From these graphs, direct comparisons can be made between the percentages of children who improved in the competition group (where individual targets were set) and the corresponding results for the same activity in the non-competition group. In this research, the biggest difference in scores were found in

the running activity where the competition group were set low targets. Here, the difference was 38% compared to only a 9.7% in the jumping activity (where high targets were set). Although, the throwing activity, where the target was unchanged (mid-level target that was their previous personal best), saw the highest percentage of children improving in session two, the difference in improvement between the scores from the two groups was 25.5 %, (13% lower than the running activity).

It could, therefore, be proposed that the CLZ exists amongst the children in this study when challenges are set just *below* their personal best scores (in this case 10% lower). However, it could be suggested that the lower targets worked better in this instance, as the children were unfamiliar with the process. Setting lower targets had the impact of creating more confidence to achieve amongst the competition group. This would appear to be more pronounced amongst the Year 2 children compared to Year 6 children, which could reflect their lower levels of physical development. This could, therefore have pedagogical implications when teachers are teaching different age phases.

In the same manner, the lower differences between the groups in the jumping activity (9.7%) could suggest that high targets are not particularly effective for this group of children. However, challenging targets such as these could be used in developing determination and resilience rather than building competence and confidence. These may be qualities that the class teacher might consider developing amongst the more-able performers; those who have already displayed competence and confidence. Future research is needed to analyse the findings according to the children's ability levels and to consider the influence of ability groupings.

5.1.3 To what extent does 'confidence to succeed' impact success?

According to Sport England (2019), only 39% of children strongly agreed that they felt confident when participating in physical activity. This research however, suggested a much higher percentage of children expressed confidence when they were set low targets. If as Bressan and Weiss (1982)

suggests, confidence serves as a 'mediator of participation choice, effort and persistence' amongst children' (p.40) and increased confidence may develop greater enthusiasm amongst children to undertake later challenges, then low targets would be a good level to generate initial engagement in new activities by creating positive experiences for those involved.

However, Dismore and Bailey (2011) stress that inadequate level of challenge can transfer into boredom and negative experiences in PE. Whilst some children may feel low level challenges do not motivate them adequately, others may become over confident and both may result in lower levels of performance. Although the numbers of children who expressed confidence in achieving the lower targets was high (at 80.6%), only 65% of those children went on to successfully achieve their target. Howells et al. (2018) suggest that when the level of challenge does not stretch the children, 'limited competition learning' (p.44) takes place.

When set mid-level targets, however, although a slightly lower percentage of children expressed confidence in achieving them (68.4%), a higher percentage of children who expressed confidence went on to achieve their targets (72%). As such, this level of challenge may represent where the CLZ exists, where 'the most consistently effective 'competition for learning' takes place' (Howells et al., 2018, p.44). Likewise, it may suggest that for this group of children, the most meaningful experience was 'just right' (Ni Chróinín et al., 2018, p.119) when they were set personal best targets.

Therefore, low targets may be effective at increasing confidence, (and potentially engagement), in PE lessons. However, confidence may have a greater impact on improving performance when targets, are set at a mid-level. Certainly, in this research when children were set targets based around their personal best score from the previous session, a higher percentage of those children who expressed confidence in achieving their targets actually went on to do so. These results also highlight the importance of using objective measures and the need for teachers to keep accurate records specific to each child.

As targets increased, beyond the children's personal best, so the confidence to achieve them waned. Only 41% of the children expressed confidence when set high targets, and only 58% those children went onto achieve their target. Not only did higher targets reduce children's confidence but it also lowered the accuracy of confidence as a gauge to measure their likelihood of success. Nonetheless, Sport England (2019) draw from their research that children who are 'confident when taking part…are twice as likely to report being resilient than someone without' (p.15). The MELC (Howells et al., 2018) concurs with this by highlighting that learning can take place outside of the CLZ, with resilience being one of the qualities that can be enhanced when higher levels of challenge reduces the likelihood of success. Therefore, in the same way, that developing increased confidence by setting low level targets may be a useful pedagogical approach when looking to build engagement and immerse children into new activities, so high level targets may be useful ways of developing resilience amongst the more-able and naturally confident individuals.

5.1.4 Age and Gender Differences

Sport England's (2019) research presents large differences in the attitudes of girls to boys in regards to their engagement with PE, with 47% of boys claiming to be confident about performing in PE compared to only 31% of girls. There were similar variances amongst the gender groups in this research in regard to their confidence to succeed, and an appreciation of these differences may prove beneficial to teachers seeking to set appropriate levels of challenge for the children in their classes. These results in Figures 18 and 19 concur with Sport England's (2019) findings. Girls appeared consistently less confident in achieving the targets set for them than the boys, across all three challenges. In particular, when high targets were set, nearly double the amount of girls (79.1%) expressed *a lack* of confidence in their ability to achieve their target compared to the boys (40%). These differences are even more pronounced when looking at Year 6 pupils. 92% of Year 6 girls felt no confidence in their ability to achieve the high targets (compared to 39.2% of boys), only 4.3% of boys

expressed a lack of confidence to achieve the low targets (compared to 28% of girls). Similar patterns do occur for the Year 2 children although slightly less definitive.

It is important to emphasise again that much of the current gender specific research has focussed on secondary aged children and even the Sport England (2019) data is taken from children aged 7-16, (thus highlighting the fact that infant aged children's views and attitudes are not being considered). Nonetheless, the 'marginalisation and alienation' of girls in very traditional sport-oriented environments that Harvey and O'Donovan describe in 2013 (p.770) as being 'well documented' (p.770) for many years, does not appear to have changed a great deal. Thus, it is important to draw some conclusions from these results in order to present possible strategies that teachers might employ to address these trends. Likewise, this research also offers new data in this field specifically for younger children.

Caroll and Loudimis (2001) suggest that one reason for girls having lower levels of enjoyment in PE is due to the lower perceptions they have of their ability compared to the boys. Consequently, they spend less time participating, whereby they achieve lower levels of attainment. However, this research did not directly ask children to gauge their self-perception of ability, focussing on their confidence instead. This could be an area for future research.

The differences in age and gender, may support the argument that Aggerholm et al. (2018) offer that perhaps, teachers should 'avoid' (p.392) competition altogether. Citing arguments presented by Kohn (1992) that if competition generates the kinds of behaviours in its participants that are 'antithetical to moral development' (Aggerholm et al., 2018, p.392) then perhaps teachers should consider alternative strategies. Aggerholm et al. (2018) suggest that PE lesson time, might be better spent creating more diverse cultural experiences for children by exposing them to 'unusual and contrasting forms of activities from a variety of different cultures' (p.392). The growth in popularity of lifestyle sports, such as skateboarding or parkour may be one such opportunity. (Aggerholm et al. 2018) 'Here tricks and

moves can provide meaningful challenges that can be inspired by others, but need not be compared with others' (Aggerholm et al., 2018, p.394).

However, if confidence is the 'mediator of participation' (Bressan Weiss, 1982, p.40) then it may be more pertinent here to draw from the positive aspects of the results in considering strategies to develop greater confidence in girls through competition, rather than simply dismissing it. With 72% of Year 6 girls and 82.6% of Year 2 girls expressing confidence in achieving low targets, perhaps this level of target is appropriate challenge that is 'just right'. Indeed, setting low, but highly achievable targets unique to each individual may help build their level of confidence and may change girls' lower self-perception of their ability.

5.2 What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

5.2.1 In which 'type' of competition do children produce their best performances?

Children in the competition group achieved their best times in the cup-stacking challenges when competing *alongside* others. Nearly half of the children (49%) achieved their best times during this type of competition compared with 33.7% who achieved their best times competing *against* others and only 17.3% doing likewise when competing *with* others.

These results raise some interesting points in regards to how teachers may consider delivering competition within their PE lessons. Harvey and O'Donovan (2013) suggest that there is an over dominance on traditional competitive team sports in PE, whereby 'the predominantly sporting ideological view of physical education represents…a 'privileging' of sport over physical activity' (p.768). Furthermore, they claim that this games-focussed approach is based more upon the personal philosophies of the PE teachers, 'rather than any explicit understanding of pedagogy or the needs of

pupils' (p. 767). Evidence from this research suggests that teachers might be more effective adopting a different approach.

Traditional team games that are played in PE lessons (football, netball or rugby for example) fall under the competing *against* others type described by Howells et al. (2018). The results, however, suggest that primary school children's competence improves more when they are competing *alongside* others and focussing on improving individual bests, rather than winning and losing (in the traditional view). Therefore, teachers may be more effective delivering competition that is less focussed on competitive team games and more on personal development. Indeed, as much as Beni et al. (2017) propose that meaningful PE lessons should include challenges that are 'just right', they also suggest that 'improved motor competence' and learning that is 'personally relevant' are also key factors in creating the most effective learning experiences (Beni et al., 2017). Individuals working to improve their own personal best scores would appear to be more successful if competing *alongside* others rather than *against* them.

This is a somewhat simplistic view, and by shifting completely towards an approach that focuses entirely on developing personal bests whilst competing *alongside* others may prove detrimental to developing learning in other areas. Howells et al. (2018) explain that each type of competition can develop different aspects of learning within children. In so much as these results suggest that greater physical competence, or learning in the practical domain (see Appendix 3) appears to take place when children compete *alongside* others, competing *against* others can help children develop cognitively, for example, through the need to create tactics to overcome challenges posed by others. Likewise, competing *with* others can help children develop their communication and team working skills as well encouraging innovation and creativity (Howells et al., 2018).

In striving to achieve all of the aims and objectives of the NPCE (DfE, 2013) teachers would need to consider a variety of different pedagogical approaches, using all three types of competition within their PE lessons, regardless of which type children perform best in. At KS1 children are required to 'master basic movements' (p.2) which, these results suggest would be best achieved competing

alongside others. However, the document also claims that the children should be taught to 'participate in team games, developing simple tactics for attacking and defending' (p.2). Indeed, even at the youngest age the NCPE (DfE, 2013) requires that children are engaged in competition 'both against self and against others' (p.2). At KS2, the subject content suggests that teachers need to consider applying all three types of competition whereby children are expected to enjoy competing with each other (competing *against*), but also through outdoor and adventurous they are expected to undertake challenges both 'individually and within a team' (p.2) (competing *alongside* and *with* others). These are important factors that teachers need to consider when planning for competition in their lessons.

Harvey and O'Donovan (2013) suggest, the structure and type of competition employed by teachers in traditional PE lessons 'serves to exclude many pupils who, in turn, possess the negative views of competition in physical education,' (p.768). Nonetheless, if recent research suggests that 50% of girls and 70% of boys *like* the competitive elements of PE lessons (YST, 2019, p.1) then perhaps it is *how* competition is delivered that is the issue. Indeed, both the results from this research and the work of Aggerholm et al. (2018) suggest that rather than remove competition from PE lessons teachers should, perhaps seek to *adapt* the way they deliver it.

By 'regulating the way contests are structured (e.g. through classification or differentiation), and/or modifying the activities… it would enable students to have positive and edifying experiences with competition' (Aggerholm et al., 2018, p.393). The YST (2019) suggest that 'adapting the scoring to develop different sport skills' (p.7) is one of the eight themes that they propose to help reframe competition. Thus, whilst appreciating the benefits (and fun) associated from competing *against* others, some of the negative connotations associated with the zero-sum approach to this type of competition can be reframed by awarding additional scores for the effective demonstration of improved skills, for example. This will ensure that the focus is not solely on the outcome of competition (the score), and should enable more children to feel that they have been involved and contributed. This is in contrast to the more traditional games-dominated approach to competition that Harvey and O'Donovan (2013) suggest encourages 'highly skilled players to dominate' (p.769).

It is also interesting that in their literature the YST highlight that this approach should not be isolated 'only for younger less-able pupils' (YST, 2019, p.7), suggesting that this may have particular relevance to primary aged children.

This approach, however, would require many teachers to adjust their philosophy towards teaching PE and would require additional training and education for teachers. This will not necessary be an easy task. The 'multi-activity model in physical education' (Harvey and O'Donovan, 2013, p.770) so often adopted by schools lends itself to the delivery of half-termly units of different sporting activities rather than focussing on the individual skill development, for example. Nonetheless, resources such as the YST's interactive 'Approaches to Competition' (YST, 2019), and pedagogical tools such as the MELC (Howells et al., 2018) were designed for this very purpose.

> 'For many coaches and parents this will mean relearning what competition is by recognising the shortcomings of their current decompetitive, zero-sum understanding of sport, and integrating more nuanced and constructive ideas of what competition can be into their views'
>
> (Torres and Hager, 2007, p.205)

This idea of adapting or reframing the way in which competition is delivered becomes even more relevant when considering children's preferences in regard to different types of competition, as this thesis considered, rather than necessarily simply considering what type of competition they perform best in.

5.2.2 Which type of competition do children enjoy most or least taking part in?

Enjoyment is the biggest driver of activity levels amongst children between the ages of five and sixteen (Sport England, 2019). This view concurs with earlier research that investigated the relationship between children's enjoyment and perceived competence and confidence (Weiss, 1987). However, despite Caroll and Loumidis (2001) suggesting that enjoyment is a 'critical factor' (p.25) in determining their willingness to participate in physical activity, they also emphasise how little research has been undertaken in this area on primary aged children (Caroll and Loumidis, 2001).

The NCPE (DfE, 2013), however, references to the need for teachers to ensure children 'enjoy communicating, collaborating, and competing with each other' (p.2). Furthermore, Beni et al. (2017) cite 'fun' as one of the five themes they consider fundamental to meaningful experiences in PE. This research sought to increase the knowledge and understanding of how competition can be used to create fun and enjoyment, and in doing so, provide guidance for teachers on how they can plan and deliver more engaging PE lessons.

The results from the post session two questionnaires (Table 4) suggest that the children from the competition group enjoyed their sessions more than those in the non-competition group, scoring an average score of 4.5 (out of 5) compared to 4 (out of 5) when asked how they felt after the lesson. These results were consistently higher in the competition group across regardless of age and gender. Furthermore, Figure 21 highlights which type of competition the children enjoyed most and least. 55.1% of the children selected competing *against* others the type of competition they most enjoyed, whereas 52% of the children scored competing *alongside* others as the type of competition they enjoyed least. These results are the reverse of the scores related to which activity the children performed best in. Thus, in this research, most of the children enjoyed most the type of competition in which fewest of them produced their best times. Likewise, the type of competition that the highest number of children produced their best time was actually the type that was least popular (see Figure 12). These results, therefore raise the question of how can teachers ensure lessons are enjoyable, engaging and fun, but also maximise opportunities to increase competence or are these two factors incompatible?

The key here may be in understanding how children perceive fun and enjoyment in PE, and how this can be incorporated into effective lessons. Caroll and Loumidis (2001) suggest that this is a complex challenge and, as most primary teachers are not PE specialists, 'enjoyment and perceived competence are not always their first priority' (p.37). This attitude may be justified. Quennerstedt (2013) used the YouTube platform to review 285 PE lessons that were posted online. His findings suggested that

teachers often overemphasised fun to the extent that lessons were undisciplined, little learning took place and the children often did not take the lesson seriously.

Caroll and Loumidis (2001) claim that fun and enjoyment in PE lessons are often 'by products, rather than direct objectives' (p.37) and stress, therefore, the importance of creating the right environment. Likewise, Beni et al. (2017) suggest that 'fun should not be ignored, nor should it be prioritised at the expense of other criteria for meaningful experiences' (p.300). Nonetheless, this research, however, suggests that children associated enjoyment most with competing *against* others.

MacDougall et al. (2004) found that children associated play with fun, and those children who have been exposed to traditional games-oriented PE lessons often associate the most fun element of the lesson to be when they play *against* others in a match, often at the end of the lesson. This may offer an explanation as to why the children selected this type of competition as the most enjoyable. To this extent one solution is for teachers to make a greater emphasis on explaining the meaning and purpose of competition. Shields and Funk (2011) suggest five steps that educators should take in order to ensure that children engage in effective competition. The first of these is to help children to understand what competition actually seeks to accomplish: 'the exhilaration, excitement, and sense of accomplishment that comes with maximising one's physical and mental potential in the pursuit of a goal' (p.8). If the children know and understand that the purpose of competition is to strive *with* others to achieve personal goals, whereby the process, rather than the outcome is the key focus, then competing *again*st others can be both an enjoyable and highly effective learning process.

Unfortunately, in this research, competition *against* others had the least impact on the children's performances. Some may argue that this is simply the nature of competition. The 'accept' argument that Aggerholm et al. (2018) offer to justify the importance of competition in PE lessons suggests that creating competitive environments like this is a way to prepare the children for a society that often pits one person against another. Drewe (2000) in their earlier work suggest for PE to 'fulfil its role as

an educative activity' (p.79) it must view teaching the competitive nature of sport as a significant component of PE.

Adopting different game-based pedagogical models designed to deliver competitive activities *against others,* but in a more meaningful way, could be an effective approach to take. Approaches such as: Sport Education (Siedentop et al., 2004); Teaching Games for Understanding (Butler and Griffin, 2010) and Game Sense (Light, 2012), (although not an exhaustive list), are all examples of different pedagogical approaches towards the delivery of PE. These approaches have been adapted to embrace the positive learning experiences from competing *against* others but which focus the participant on learning outcomes beyond merely 'winning' (Metzler, 2017). Indeed, Beni et al. (2017) suggest that children prefer it when teachers place greater emphasis 'on the challenge(s) inherent in the process of competing rather than on the outcome' (p.302).

Furthermore, if the results from this research suggest that children develop greater competence when set individual targets based upon their own personal bests, then perhaps the most effective (and enjoyable) competition for learning could take place when children compete *against* others, but whilst doing so they are given specific competence-related targets to achieve. The YST adopt a similar stance in their recent guidance for teachers that encourages them to reframe competition (YST, 2019) by, adapting the scoring mechanisms and rewarding individuals who achieve personal goals and targets as part of the team's overall score.

Future research could consider understanding *why* children prefer one type of competition rather than another. The results from this research suggest that enjoyment may not be related exclusively to performance, the use of open ended questions, would help analyse this. After all the children selected the type of competition that was most enjoyable as the type of competition that the fewest numbers of children achieved their best time in. One explanation for this may relate to how children perceive success and what value they place on that success. Egocentric motivated individuals (Xiang et al., 2001) may consider beating an opponent as more satisfying than improving a personal best time. In

this research they may have enjoyed competing *against* others more than competing *with* or *alongside* them, regardless of what time they achieved. In competing *against* others the children were asked to 'duel' against a partner in a 'best of three' contest. Therefore, half of the group would have 'won' the challenge and half would have 'lost'. The 55% of children who chose this type of competition as their favourite may simply reflect the group of children who 'won' their challenge.

5.3 Individual Differences and Choice

Many of the results presented in chapter four highlight differences according to age and gender. It is acknowledged following Smith's (2018) guidance that once the whole sample have been filtered into much smaller age and gender sub-groups the lower numbers begin to make accurate assumptions from the findings more challenging. However, these differences may provide potential guidance for teachers looking to develop the most effective strategies to deliver competition to different classes and are therefore important to consider.

These variances highlight the proposal that perhaps different children respond to competition, (be it in the size of targets or the type used), in different ways. The key perhaps is to appreciate that each child's views and attitudes differ and these need to be considered when planning PE lessons. Consequently, teachers may need to consider Aggerholm et al.'s (2018) final proposed approach to the delivering competition; the concept of 'choice'.

By allowing children greater involvement in deciding which type (choice) of competition they would like to participate in and the level of challenge that is most suitable for them, it will empower the children with a greater sense of ownership of their learning, which will also drive increased motivation and engagement (Aggerholm et al., 2018). The 'ask' pedagogical approach offered by Aggerholm et al. (2018) is nothing new. Dewey (1997) stressed the 'emphasis upon the importance of the participation of the learner in the formation of the purposes which direct his activities in the learning process' (p.

67). The extent to which this would be possible would tend, in many cases on the ability of the school to manage the concept of choice. This may simply lead to children opting which activity within lessons they would want to engage in or it could go so far as involving children in redesigning curriculum programmes (Aggerholm et al., 2018).

Alternatively, using the student-designed games pedagogical model (Casey et al., 2016) could be a strategy that gives children greater autonomy in choosing the type of competition and level of challenge they face. Combining elements of both the 'adapt' and 'ask' arguments presented by Aggerholm et al. (2018) this approach takes children through a process by which they create their own games, including developing the rules and scoring mechanisms, this would mean the children are modifying the games being undertaken rather than the teacher. In doing so, not only will children devise their own strategies to ensure the games are inclusive and that the level of challenge involved is differentiated to cater for all abilities, but it can also lead to them discussing why these are important. This approach addresses the need for 'personal relevant learning' in meaningful PE lessons (Beni et al., 2018) whereby teachers highlight the 'importance of individualising pedagogical approaches to help students make personalised connections' (p.395). Furthermore, the YST (2019) present 'the importance of adding fun elements to engage new audiences' (p.9) as one of the eight themes they promote when considering how teachers may 'reframe competition' (YST, 2019). When advising teachers how this could be accomplished the first top tip they suggest is to ask the children for their ideas of what they would like to see changed or added.

The results from this research show that children demonstrated greater levels of improvement when they were set competitive targets. They were given no choice, however, in what that target was. Perhaps, if each child were given the choice of the level of target or the type of competition they would like to participate in, then the positive improvement that competition had on their competence, confidence and enjoyment may have been even greater, this could be undertaken as further research.

CHAPTER SIX: Conclusions

6.0 Introduction

The thesis highlights the contested discourse around the topic of competition and its purpose and value. In doing so it demonstrates clear gaps in this field of research, particularly in regards to the impact of competition on primary aged children and when used specifically in PE lessons (as opposed to how it is applied in extra-curricular school sport clubs and organised youth sports programmes).

To investigate the ideas presented by Howells et al. (2018) that teachers should consider using competition as a pedagogical tool to help develop competence, confidence and enjoyment in primary PE lessons this thesis proposed two research questions in relation to the participating groups; how can competition foster improvement in competence in Physical Education lessons? And, what 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons? This chapter will draw conclusions from the data gathered and subsequent discussions about possible implications for the practical application of these findings in both policy and practice. The chapter will also present possible limitations of the study and potential areas for future research in this field.

6.1 How can competition foster improvement in performance in Physical Education lessons in a field-based purposeful sample of Year 2 and Year 6 children?

The results presented appear to confirm the notion that children's competence, (demonstrated by their performances in three physical activity challenges) improve when they experience competition. The results were consistent across the different age and gender groups, suggesting, therefore, that using individualised challenges is an appropriate way to use competition in lessons to foster improved performance.

Although improvement was evident amongst the competition group in *all three* activities, (regardless of the level of target), the highest percentage of children improved when set mid-level targets. This suggests, therefore, that the apex of the CLZ (Howells et al., 2018) sits in and around an individual's

'personal best' and that teachers need to consider how they can differentiate the competition they deliver to challenge each child within their own CLZ (Howells et al., 2018).

The results and subsequent discussion also highlighted situations where the use of higher or lower challenges may be appropriate. Low targets should be used when introducing new concepts or when children need to develop greater confidence and high targets may be more appropriate to use when working with more-able children or when trying to develop greater resilience.

A further finding from the data collected suggests that primary aged children may actually *need* competition in order to stay engaged within PE lessons. The performances of a high proportion of children in the non-competition group regressed in session two, which suggests that without the added focus that competition brings, many children may actually lose focus and may be less committed to improving.

Attempts to quantify the CLZ (Howells et al., 2018) may be possible (and worthwhile) when setting children individual targets in PE lessons, when they are competing *alongside* others. However, this becomes more problematic when delivering other types of competition. Consider a traditional game of 'stuck in the mud' in which one or two individuals (the taggers) will compete *against* the rest of the group, trying to tag and freeze them all, whilst their classmates seek firstly to avoid being caught but also to unfreeze their colleagues who have been tagged. Arguably, the perfect organisation of this game is when the taggers are able to tag just enough people to keep maintain their interest, whilst the rest of class feel suitably challenged by the taggers but feel they can achieve success but have to maintain a sustained level effort and concentration to do so.

The point of equity, whereby everyone is engaged and working hard, symbolises the CLZ (Howells et al., 2018). Good teachers will recognise when things are not working; where one side is achieving more success than the other, and will adapt the activity to create the equity again (by adding an extra tagger or making the playing area bigger, for example). However, it is not possible to quantify this scenario. There is no ideal ratio of taggers to runners as different variables will affect the success of the activity, such as the size of the area and speed and agility of the children. When it 'works' everyone is engaged

at their own level – some children seek just to find space and avoid the taggers, whilst others (often the more confident) look to free classmates who have been frozen. The key here is for teachers to understand what the CLZ symbolises, and what they should be seeking to achieve in the competition they deliver in their lessons. For this it is worth revisiting the definition of 'true competition' (Shields and Funk, 2011): 'It is the exhilaration, excitement, and sense of accomplishment that comes with maximising one's physical and mental potential in the pursuit of a goal' (p.8). If teachers can differentiate their competitive activities to engage all children in such a way that they feel the 'exhilaration, excitement and accomplishment' that Shields and Funk (2011) refer to, then it is likely that those children will be working in or very close to the CLZ (Howells et al., 2018). For some teachers though it is recommended that they may require more experience or continuing professional development CPD to help support knowing when and how to adapt the activity, to ensure all children are engage and to help them feel confidence and competent in their PE teaching.

6.2 What 'types' of competition develop the most confidence, competence and enjoyment in Physical Education lessons of a field-based purposeful sample of Year 2 and Year 6 children?

The data shows that children enjoyed the sessions where elements of competition were included more than in the sessions when they were not, again suggesting that, if delivered appropriately, competition can be used to engage children in their PE lessons. However, the data also raised some interesting results in regards to the relationship between the type of competition the children enjoyed most and the type in which they produced their best performances. Although the results suggest that most children enjoyed competing *against* others most children demonstrated the highest level of competence when competing *alongside* others.

In trying to understand these differences, several reasons were considered. From one perspective it was highlighted that it might reflect that the criteria by which children gauge 'enjoyment' is not necessarily driven by a need to succeed or win, and that actually the opportunities for social interaction that come from competing *against* others, may make this type of competition more

enjoyable. Conversely, the children's responses to what type of competition they enjoyed most may demonstrate the influence of decompetition (Shields and Funk, 2011) which is so often associated with negative side of competition that focusses too heavily on gaining superiority over others and 'winning' (Shields and Funk, 2011). It was suggested that as approximately half of the children chose competing *against* others as their most enjoyable type of competition, this may actually reflect the half of the class that 'won' their competition against a teammate, regardless of whether they produced their best time in that activity. Whichever perspective is correct, this creates potential implications for when teachers are considering the types of competition they use in lessons, and how it is delivered, (which will be discussed in the implications section).

6.3 Individual Differences

The data collected was overall very consistent across the age and gender differences. For example, the impact of competitive targets and the different types competition produced similar responses throughout the different sub-groups. Conclusions can suggest that Year 2 children respond as positively to competition as Year 6 children, despite the limited research in this field. Despite the latest research from the YST (2019) suggests that girls are less motivated by competition than boys, the data from this thesis suggests that the introduction of competition had a positive impact on the girls as well as boys, but it depended upon the type of competition being used. Moreover, the results suggest that encouraging girls to compete more *alongside* others to overcome low targets may have the most beneficial impact on their competence, confidence and enjoyment in PE lessons.

Indeed, the one area where most individual differences were apparent was in the competition group's level of confidence to achieve the different level of targets set for them. The boys demonstrated the highest rates of confidence when they were set low targets. However, the girls did not respond well when set high targets, with 92% of Year 6 girls, in particular, declaring a lack of confidence in their ability to achieve the high targets set for them.

6.4 Implications and Recommendations

The findings from this research creates a number of implications for how the class teachers of the groups in this study may consider planning and delivering competition in PE lessons. Aggerholm et al. (2018) offer four ways future discussions surrounding the use of competition in PE may be considered; 'avoid, ask, adapt or accept' (p.385). The results from this research have demonstrated that competition can have a positive impact, even on the youngest children and therefore teachers who *avoid* the use of competition for fear of the negative connotations associated with decompetition (Shields and Funk, 2011) could lead to children actually be missing out on the benefits highlighted. Clearly, however recent data from Sport England (2019), the YST (2018) and Chance to Shine (2014) suggests that for teachers to *accept* the current approach and the emotional impact that winning and losing (in a very traditional sense) has on children could exclude many children from the positive impacts that competition can have. Perhaps it is important to consider the teachers' response to when children win and lose and how they can support emotional development of the children. Most importantly, if the ineffective use of PE disengages children at a young age, this could have significant implications on their health and well-being throughout the lifespan (International Physical Literacy Association, 2016).

Thus, the findings suggest that the class teachers need to consider how they might *adapt* the way that competition is perceived and delivered within primary PE amongst the groups in this study. Although their resource is more designed for the delivery of competition for school sport rather than in PE lessons, many of the ideas and themes the YST (2019) present to reframe competition would appear to support these ideas.

Much of the criticism of the way competition is currently delivered relates to the way that the PE curriculum is still designed, with an over-focus on traditional competitive team games (Harvey and O'Donovan, 2013). This research suggests that whilst competing *against* others is the most enjoyed type of competition, perhaps if the class teachers could adapt the focus to that type of competition,

whereby children are set specific goals and targets to achieve *within* the game then each child may feel more engaged and included with the outcomes produced.

Nonetheless, focussing on competing *alongside* others produced most improvement in competence amongst children and perhaps, therefore curriculum design and lesson delivery should focus more on this rather than winning team games. This leads to Aggerholm et al.'s (2018) fourth consideration; *ask*. Beni at al. (2017) propose that meaningful PE lessons should ensure that the learning is personally relevant to each individual. The idea of a CLZ at the centre of the MELC (Howells et al., 2018) suggests that there is an appropriate level by which competition should be delivered in order to affect the best learning. This thesis suggests that for the groups in this study this point should equate to each child's individual best and therefore will be different for each person. Effective competition, therefore, needs to be delivered in such a way that it is differentiated to include all children, not just the most-able (Harvey and O'Donovan, 2013). The results show that different ages and genders may respond differently to being set targets and that perhaps, therefore, giving them greater choice of the type and level of competition that they undertake will help to increase their engagement with, and enjoyment from PE lessons.

This requires, in many cases, a significant shift in attitudes and approaches towards how competition is used. The work of Howells et al. (2018) in developing the MELC and presenting ways effective ways to use competition begins to explore this notion. However, as Harvey and O'Donovan (2013) previously alluded to there is also a need to inform and educate pre-service teachers in order to change attitudes and perceptions of competition. This should start with educating children and teachers (and perhaps parents) in the meaning and value of competition (Shields and Funk, 2011). Moreover, schools might consider adopting the premise of teaching effective competition as a pedagogical model in its own right as a unit of work, rather than simply delivering the traditional multi-activity model for PE that still dominates curriculum time.

6.5 Limitations and Future Research

In reflecting on how the data and findings from this study may be of value to a broader audience, some of the limitations within the methodology used in this example need to explored, and alternative approaches considered.

When investigating the impact of different levels of challenge, each of the three activities assessed in this part of the study (the running, jumping and catching/ throwing tasks) required the children to perform *different* skills. As much as it has been acknowledged that the activities were selected and differentiated in consideration of their age appropriateness (Gallahue and Ozmun, 2011), the value of making comparative evaluations is limited by the fact that different variables were being assessed, and therefore somewhat problematic. More children may have produced better scores in session 2 in one particular activity simply because the task requirements meant it was easier to do so, regardless of the level of challenge set via a specific target. For example, had a child dropped the ball once when catching and throwing activity may have a had a bigger impact on their overall score than perhaps a child who failed to complete one jump appropriately. Consequently, it could be argued that for future research it may be better to ensure that when seeking to assess the impact of changing one variable (the level of challenge) other possible impacting variables (such as children completing different tasks) could be mitigated by having all children doing just one activity (either running, jumping *or* throwing/ catching).

The challenge of replicating the controlled environment and conditions over two sessions, whilst not being able to control what happened *in between* was a limiting factor in this research. Thomas (2017) describes how 'confounding variables' (p.172) may influence the results of an experiment. These are often things that happen outside of the testing environment, that may still have the potential to skew results. For example, although the class teachers were asked not to deliver any activities in the time between the sessions that may support improved performances in session two, this does not negate children repeating some of the activities on the playground in their own time. Others perhaps may have been members of an athletics club, who could have taken part in activities designed to improve

running, jumping and throwing. These activities may indirectly influence improvements that are not related to the competition factors that they may have influenced either positively or negatively the children's confidence, competence and enjoyment.

Equally, to make comparisons between children who were set competitive targets and those who were not depended upon the children in the non-competition group not knowing their score from session one. Staff were instructed simply to record the score for each child in session one but NOT to share that with them. However, this does not preclude some children who may have counted or kept their own scores in session one and remembered them when the activities were repeated in session two, thereby giving themselves a target to aim for, unbeknown to the researcher.

Another limiting factor was the young age of some of the children and whether it is possible to draw valid and worthwhile conclusions from their scores, particularly with respect the completion of questionnaires. In using simple, unambiguous language and visual labels, (in the form of smiley faces), rather than numeric scales, the questionnaires used in this research considered some of recommendations that Austin (2016) makes for designing children's questionnaires. Nonetheless, in working with children from Year 2 a number of the participants in this research were still only six and seven years old, which was the lowest age (7 years) that Bell and Waters (2018) considers feasible to use with this approach.

Bandura (2006, pp.308-308) argues that there is no ideal tool to measure perceived self-efficacy and that 'scales of perceived self-efficacy must be tailored to the particular domain of functioning that is the object of interest'. However, Bandura (2006) does go on to emphasise that 'happy or sad faces are to be avoided' (p. 313) as they can lead to children misinterpreting the scale as a gauge of their happiness rather than their confidence to achieve a task. Thus, the results produced from this research which used the very type of smiley faces that Bandura (1995) suggests should be avoided (as demonstrated in Figure 8) and may be less reliable than hoped. Future research may consider, therefore, using alternative tools to evaluate the children's self-efficacy, adapting existing models such as the Children's Self-Efficacy Scale (Martinelli et al. 2009) to suit the specific audience.

Moreover, although the physical activities were selected, in part, because of the need to differentiate the tasks for children in Year 2 and Year 6 to cater for differences in physical ability, this research does not take into consideration different levels of cognitive and psychological development. The research asked children in the competition group to declare their level of confidence in their ability to achieve targets set for them so that comparisons could be made between the different age and gender sub-groups, there may not have been a secure understanding of what confidence is within the young age group, which potentially could have influenced the results. However, Kirk (2005) suggests that there are differences in the way children of different ages perceive their ability which may influence the value of any comparisons that can be made. Kirk (2005) argues that under the age of 10 children 'believe that they can accomplish most physical tasks if they try hard and tend to overestimate what they can do' (p.242). Beyond age 10, however, Kirk (2005) suggests that 'maturational cognitive changes' (p.242) means that children tend to make judgements about their perceived ability through comparisons to others, rather than simply equating it to the effort applied. Consequently, making direct comparisons in regards to the level of confidence between Year 2 and Year 6 girls, for example, may not entirely reflect the nature of competitive challenge.

The structure of the research questions themselves may also need adjusting for future investigations to avoid any ambiguity in interpretation. Research Question 2 is structured in such a way as to suggest that one particular 'type' of competition may elicit improvement in confidence, competence *and* enjoyment. Although, as highlighted in chapter 2, these factors are often linked, they are independent variables and should be recognised as such. Indeed, as this study demonstrated, as much as the implementation of one 'type' of competition may have a positive impact on the levels of enjoyment in the class, that does not necessarily mean that the children's confidence and/or competence will also improve.

With a sample of size of just under one hundred, the use of percentages to evaluate and interpret the results was considered appropriate for this experimental research (Austin, 2016). However, future research should consider using a larger sample for which a greater level of scrutiny would require

more statistical analysis to look for significant differences in the data, rather than descriptive statistics as advised by Austin (2016). Additionally, as the groups were analysed by age and gender to make comparisons between their results, the numbers within each sub-group became relatively small. Smith (2018) highlights that trying to interpret data and make generalisations from such sub-groups can be 'extremely problematic' (p.115). Future research using a larger population would make these comparisons more valuable (Smith, 2018).

However, rather than counting the number of participants, if one were to consider the number of items collected for each participant the sample becomes much larger and therefore worthy of greater statistical analysis. For example, in both the competition and non-competition groups data was collected from the running, jumping and throwing/ catching challenges from which percentages of those who improved, regressed or recorded no change over the sessions. This equates to 294 data scores collected for the competition group and 297 for the non-competition group. However, Field (2018, p.443) explains that in comparing differences between the mean scores collected from two different groups, 'all we are doing is predicting an outcome based upon membership of those two groups.' Certainly, the need to determine whether there is a statistically significant difference between the results achieved from the two groups in this study would help to justify further research within a much larger population. Consequently, for this research an independent t-test is an example of the next stage of analysis that needs to be applied to these results (Chen, 2012). This type of inferential statistics compares the mean scores from two independent groups (in this example, the competition and non-competition groups) to ascertain if there is a significant difference. A t-test is often used to test a hypothesis, which enables researchers to explore if an assumption made in the research is applicable to a larger population. Future research may also consider expanding the analysis to consider factors that may support some of the arguments presented here. For example, the children were asked to report on the type of competition they enjoyed most, but only the quantitative data was used to differentiate the scores for each type to rank them. To understand and justify *why* the

children made their choices further analysis from a mixed methodological approach could be used through the collection of qualitative data.

Individual differences were considered in this research based upon age and gender. However, it was suggested in the discussion chapter that lower ability children might benefit more from lower targets. Likewise, more-able performers could learn to persevere more and develop resilience if set higher targets. Research by Bernstein, Phillips, and Silverman (2011) discovered that children of lower ability associated negative experiences in PE (compared to their more-able peers) with lessons where competitive activities were used. Future research might consider the impact of use of competition on children of different abilities as well as age and gender sub-groups. Additionally, research suggests that children from less affluent families are less likely to enjoy being active and have lower confidence and competence in PE (Sport England, 2019) and this could be further investigated in future research.

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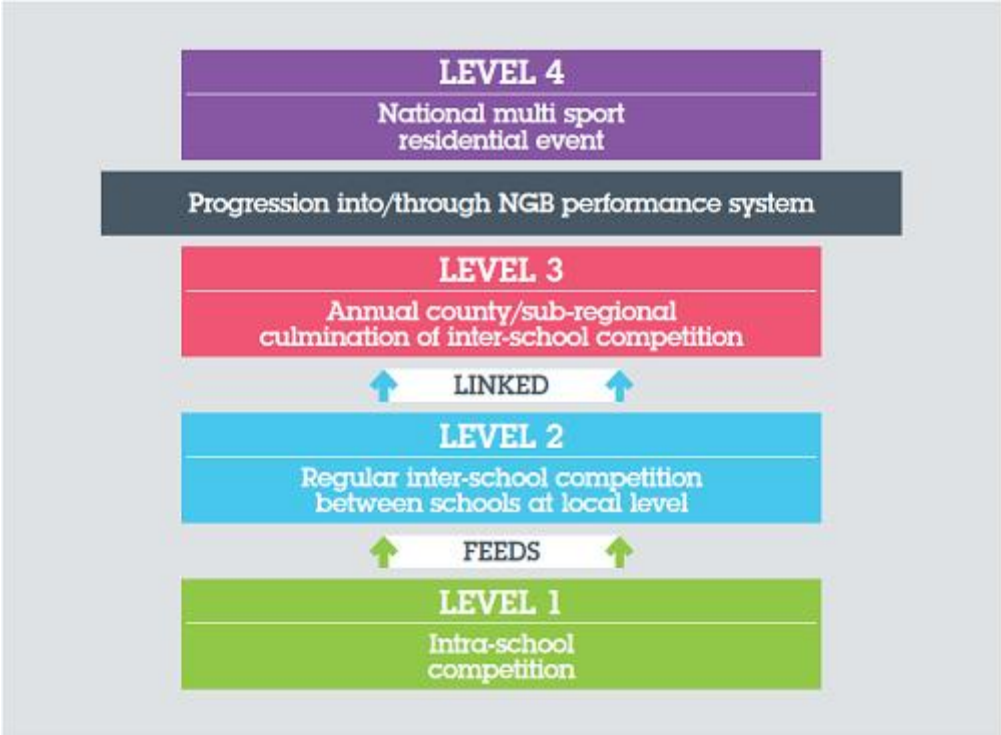
Appendices:

Appendix 1: The Four tiers of the National School Games Programme



(Sedgefield SSP, 2019)

Appendix 2: Skultety's Competition Types

TYPE OF COMPETITION:	**DESCRIPTION:**	**EXAMPLE:**
Vis-à-vis, Encumbered	Individuals/teams attempt to outscore opponents who actively attempt to negatively influence their performance	School football fixtures, badminton match
Vis-à-vis, Unencumbered	Lanes or lines make the activities unencumbered, but there is no set standard that actions are measured against – typically first past the post, longest, furthest, highest etc.	Swimming galas, athletics events, any races
Standardised, Unencumbered	Individuals 'perform' for judges who score against a pre-set criteria	Gymnastics, trampolining events
Standardised, Encumbered	Least common, but where pre-set winning conditions or positions exist and performers seek to achieve this condition at the expense of others	Boccia, croquet, chess

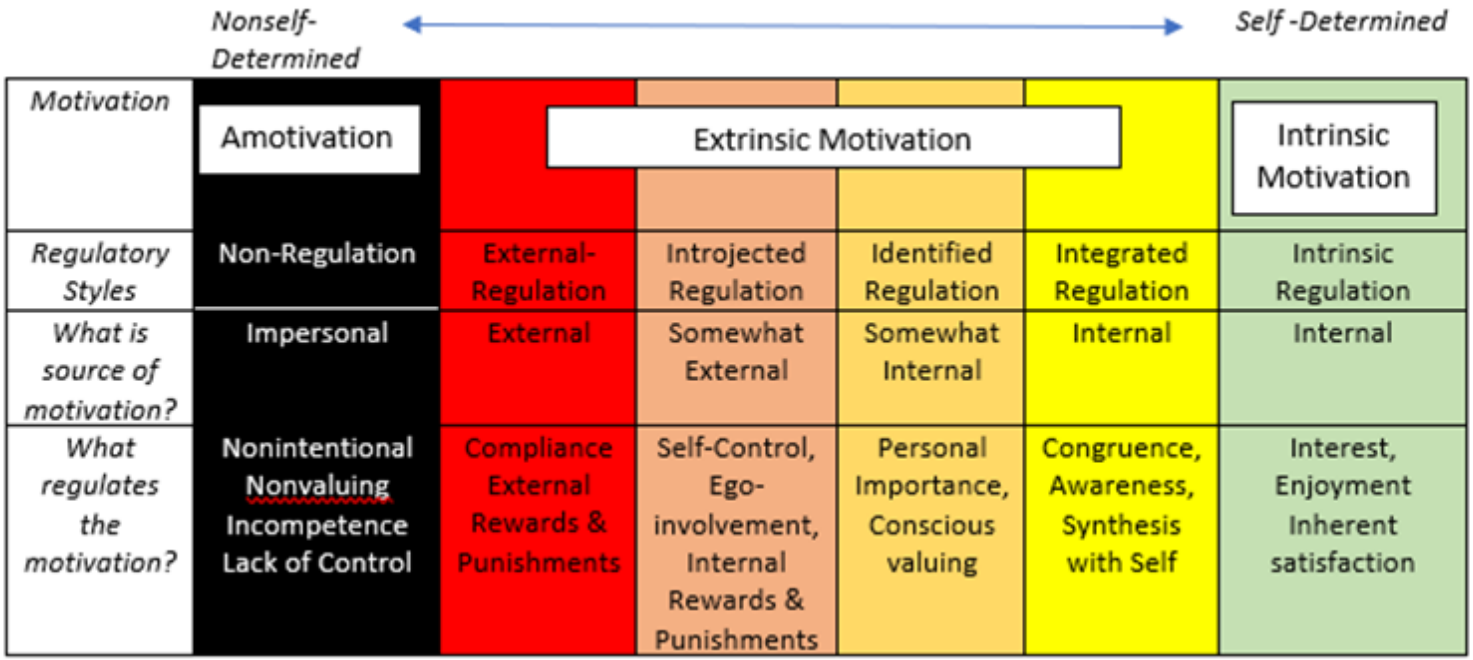
(adapted from Skultety, 2011)

Appendix 3: How competition in PE lessons can support learning across domains of learning

PRACTICAL	COGNITIVE	SOCIAL
• Competition allows for learned skills to be developed within increasingly 'open' environments • Competition allows children to perform skills in a context where there is real value and meaning • Competitive environments sharpen children's focus and attention –it inspires them to try harder • Children to refine their technique in competition – ensuring they adhere to rules (such take-offs and landing for long jump)	• Effective decision-making can be crucial to success in competitive environments • Understand need for tactics and when to apply them • Competition provides focus for effective for understanding and evaluating own performance and that of others • Chances to do, review and evaluate through group debriefing	• Appreciation of feelings from winning and losing • Appreciation of different roles or functions others may perform • Fun from working collaboratively on shared goals • Mixed groupings allow all to be successful (less-able children benefit from working with more-able) • Opportunities to develop leadership and communication skills

(adapted from Howells et al., 2018, p.34)

Appendix 4: The Self-Determination Continuum



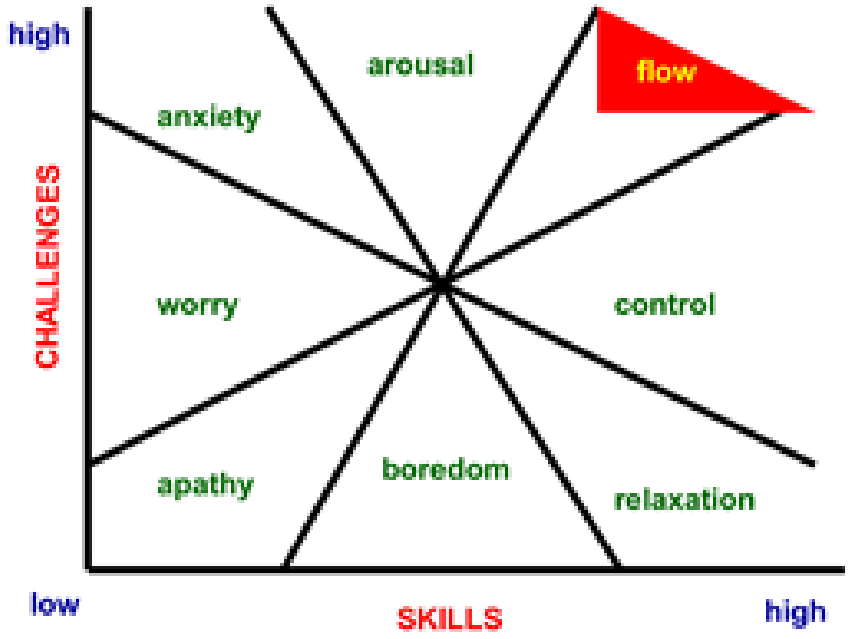
Adapted from Ryan and Deci (2000), p.72

Appendix 5: Bandura's Social Cognitive Theory (1977)

Bandura's Social Cognitive Theory (1977) highlights four areas that can influence an individual's self-efficacy:

- ***Mastery Experiences***. The more an individual has achieved success in the past; a 'mastery experience' the more confident they are going to be that they can overcome similar challenges in the future.
- ***Vicarious Experiences.*** The ability for individuals to observe the behaviours of others (particularly positive role models) increases their belief that they too can achieve similar successes.
- ***Verbal Persuasion.*** The more that influential others (parents, teachers, coaches) can convince individuals that they have the ability to achieve something, the more likely it is that they will apply enhanced efforts to do so.
- ***Emotional and Physiological States.*** An individual's self-efficacy can be affected by their emotional state. Thus, stress and tension can lead to feelings of vulnerability and doubts in performers. Likewise, positive emotions can have the opposite impact on an individual's self-efficacy.

Appendix 6: Flow - Eight dimensions of experience



(Csikszentmihalyi, 2008, p.214)

Appendix 7: Results

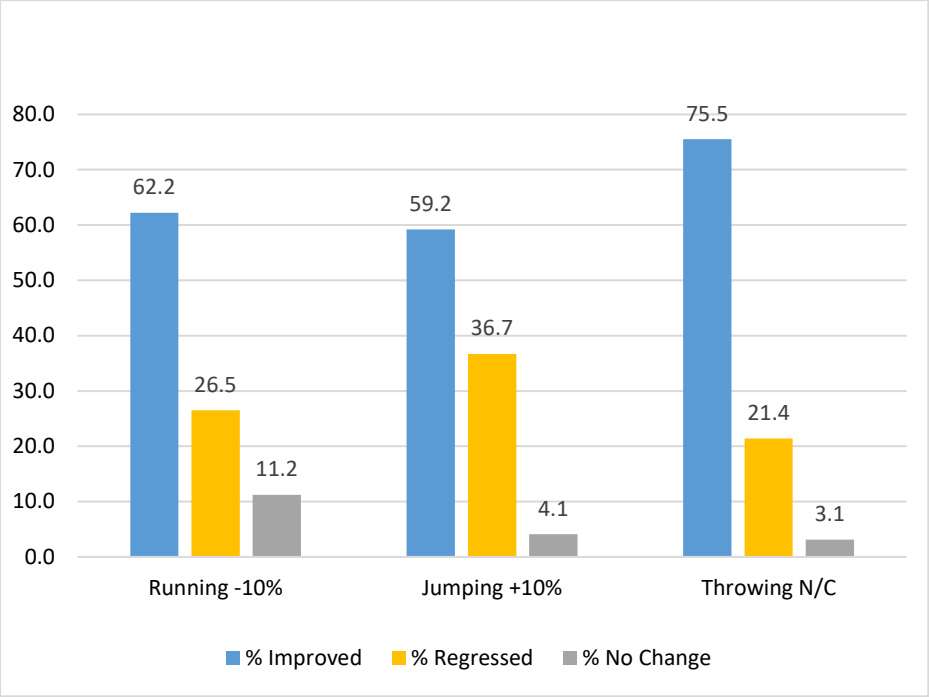


Figure 9: *Percentage number of children in the Competition Group and their changes in Competence in session two (when set targets).*

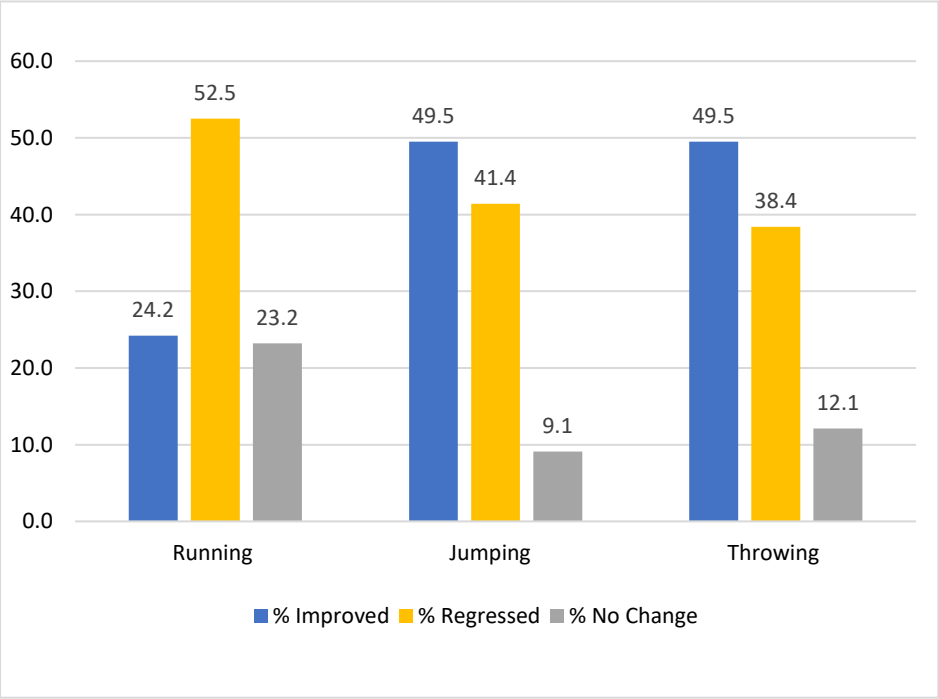


Figure 10: *Percentage number of children in the Non-Competition Group and their changes in competence in session two (when set no targets).*

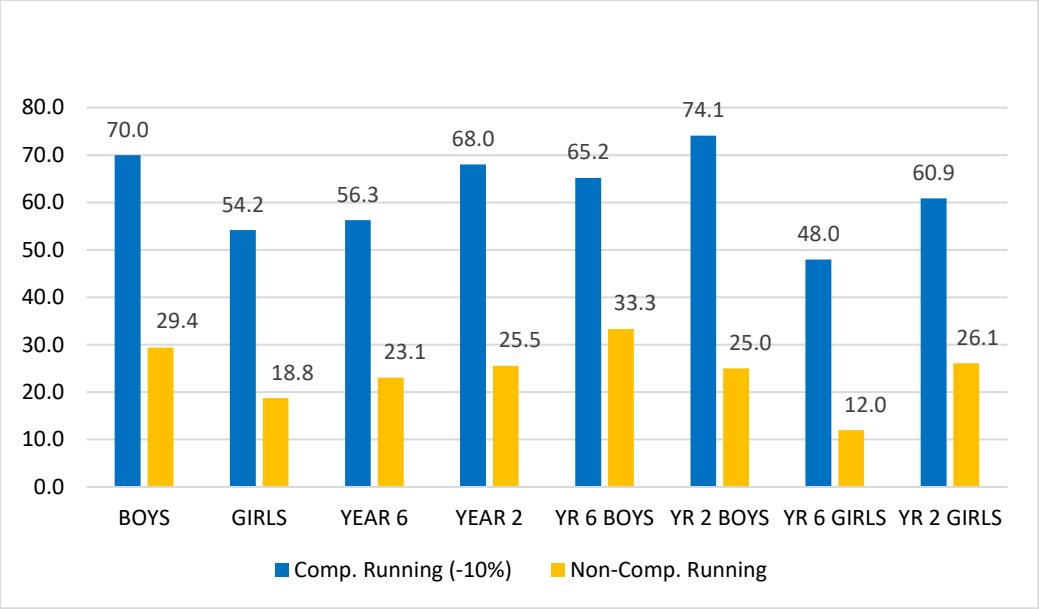


Figure 11: *Percentage number of children whose scores improved in session 2 in the* ***Running*** *Challenge.*

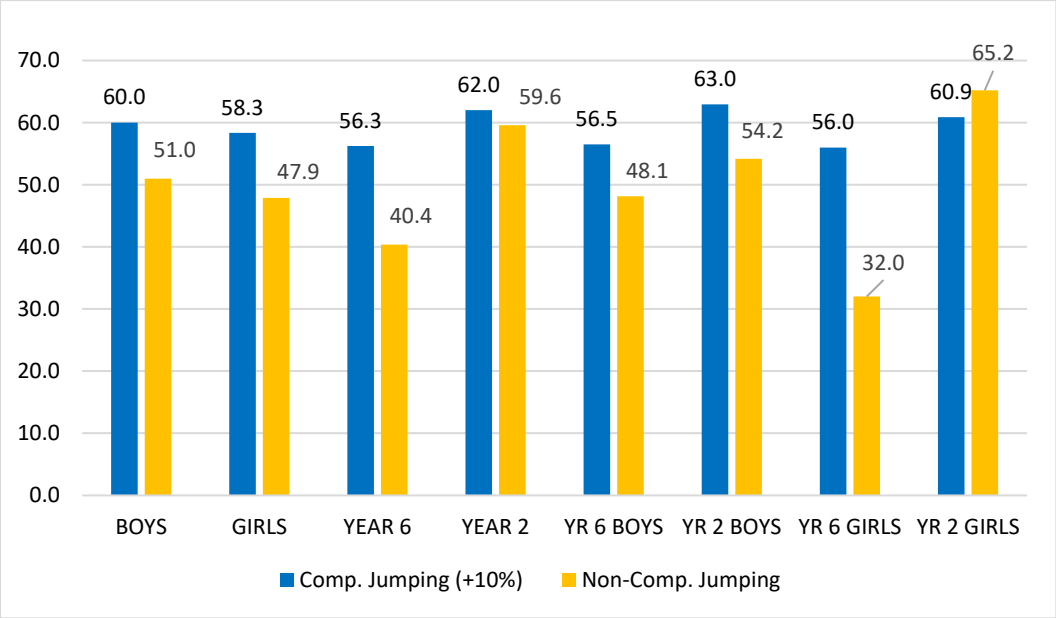


Figure 12: *Percentage number of children whose scores improved in session 2 in the* ***Jumping*** *Challenge.*

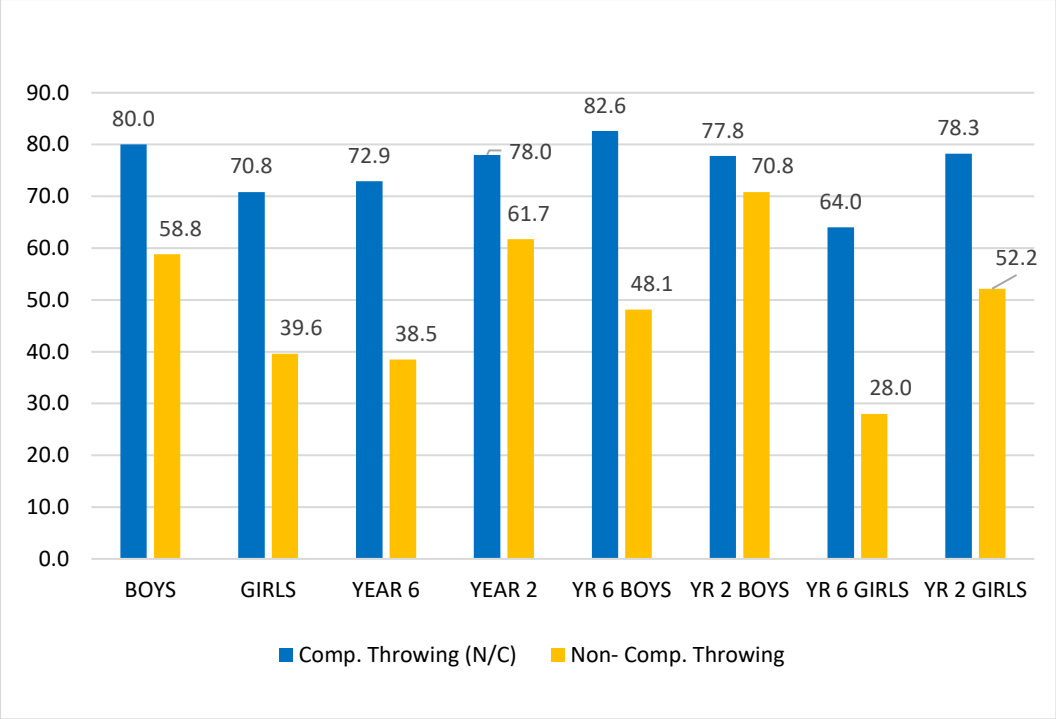


Figure 13: *Percentage number of children whose scores improved in session 2 in the* ***Throwing*** *Challenge.*

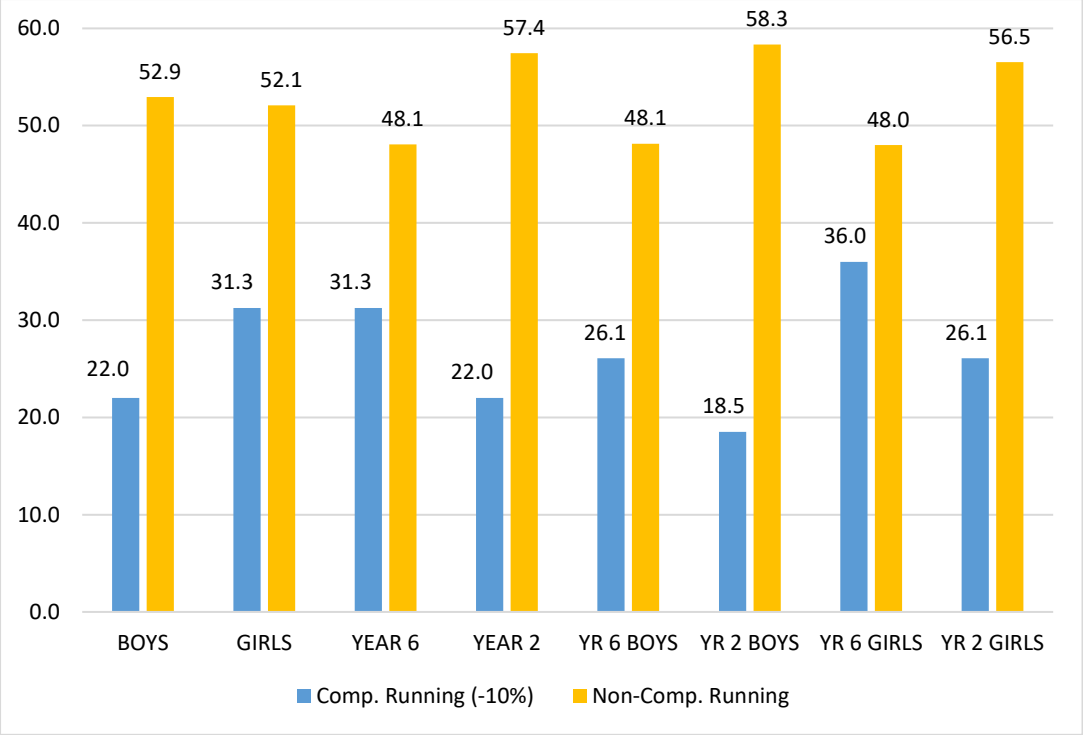


Figure 14: *Percentage number of children whose scores regressed in session 2 in the Running Challenge.*

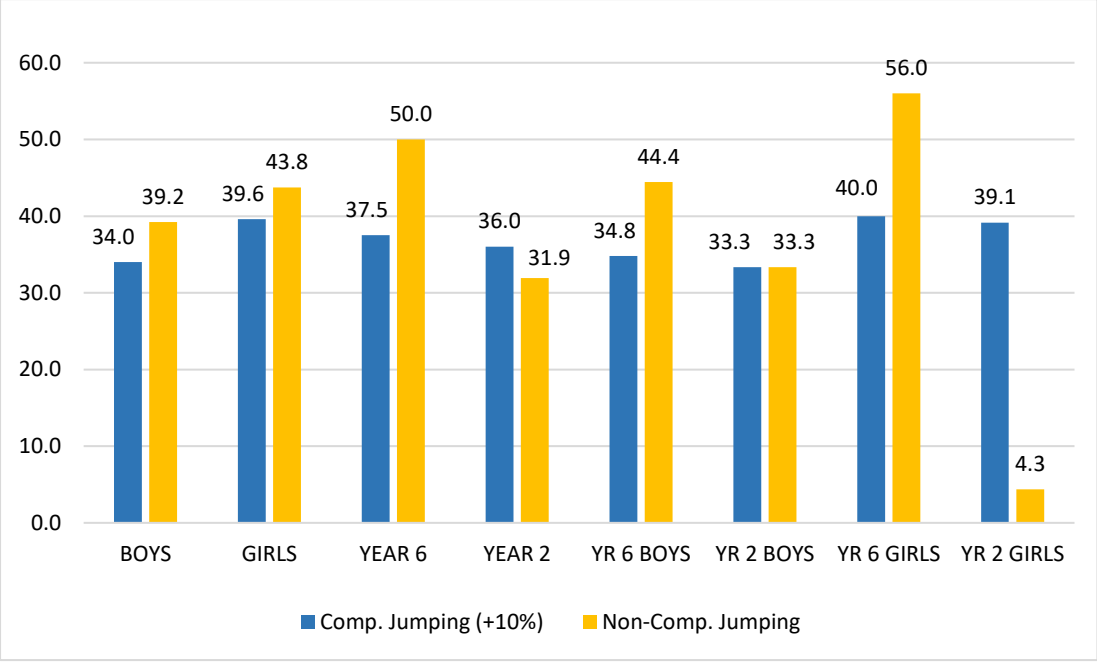


Figure 15: *Percentage number of children whose scores regressed in session 2 in the Jumping Challenge.*

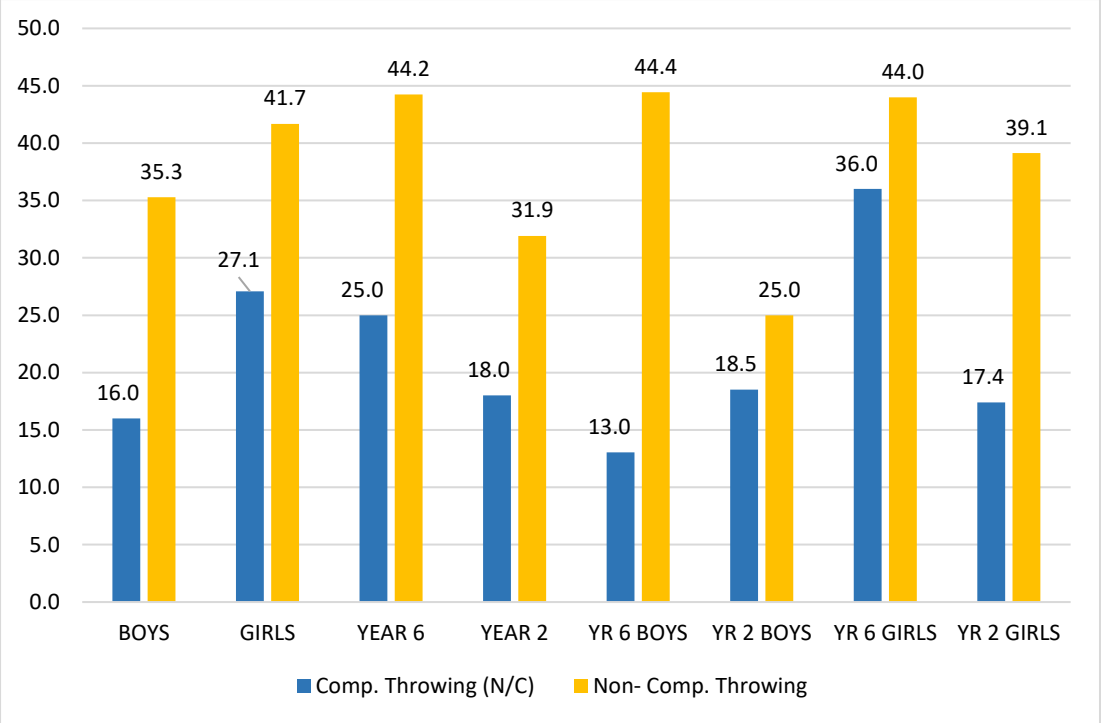


Figure 16: *Percentage number of children whose scores regressed in session 2 in the Throwing Challenge.*

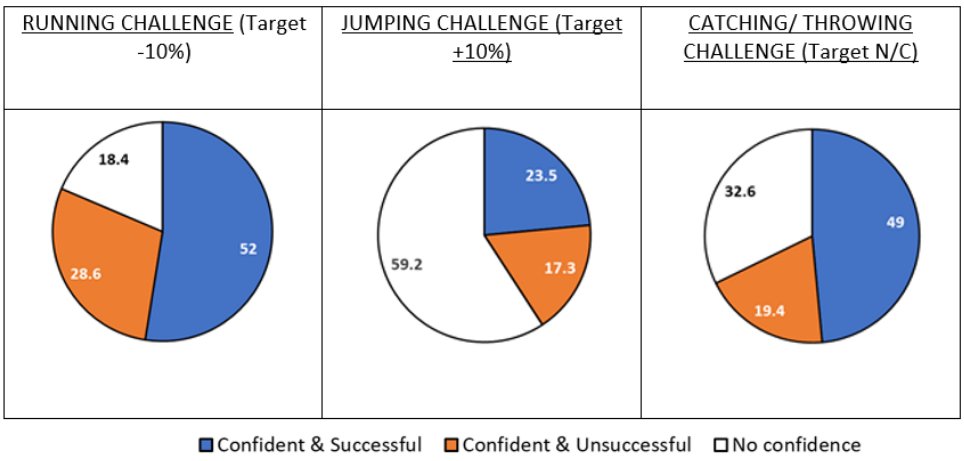


Figure 17: *Percentage number of children who were confident they would achieve the targets set in session two in the competition group.*

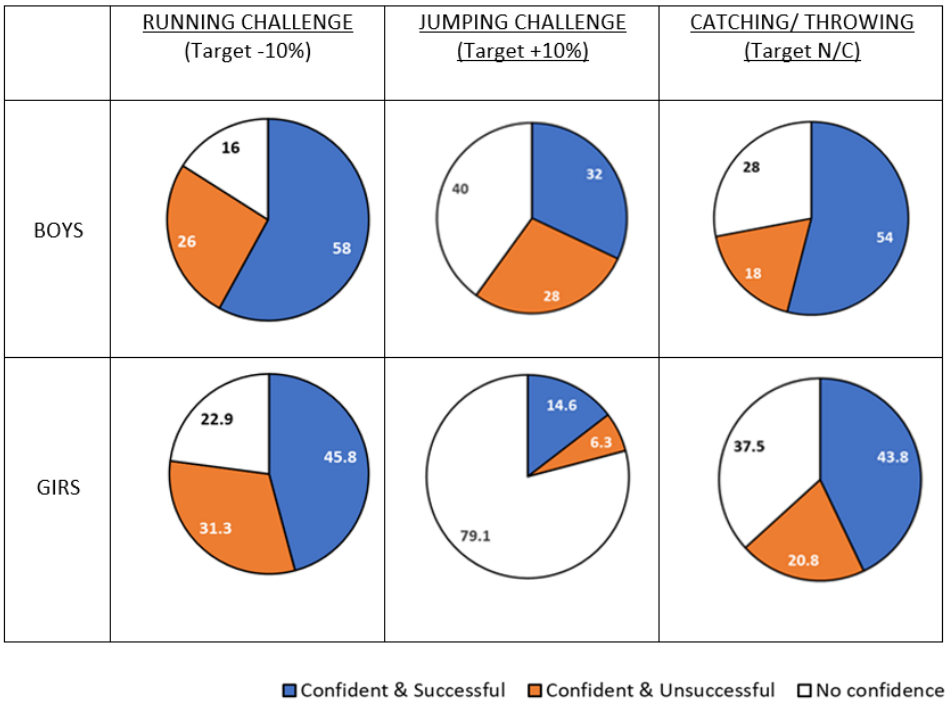


Figure 18: *Percentage number of children who according to gender were confident and successful at achieving their targets in session 2 in the competition group.*

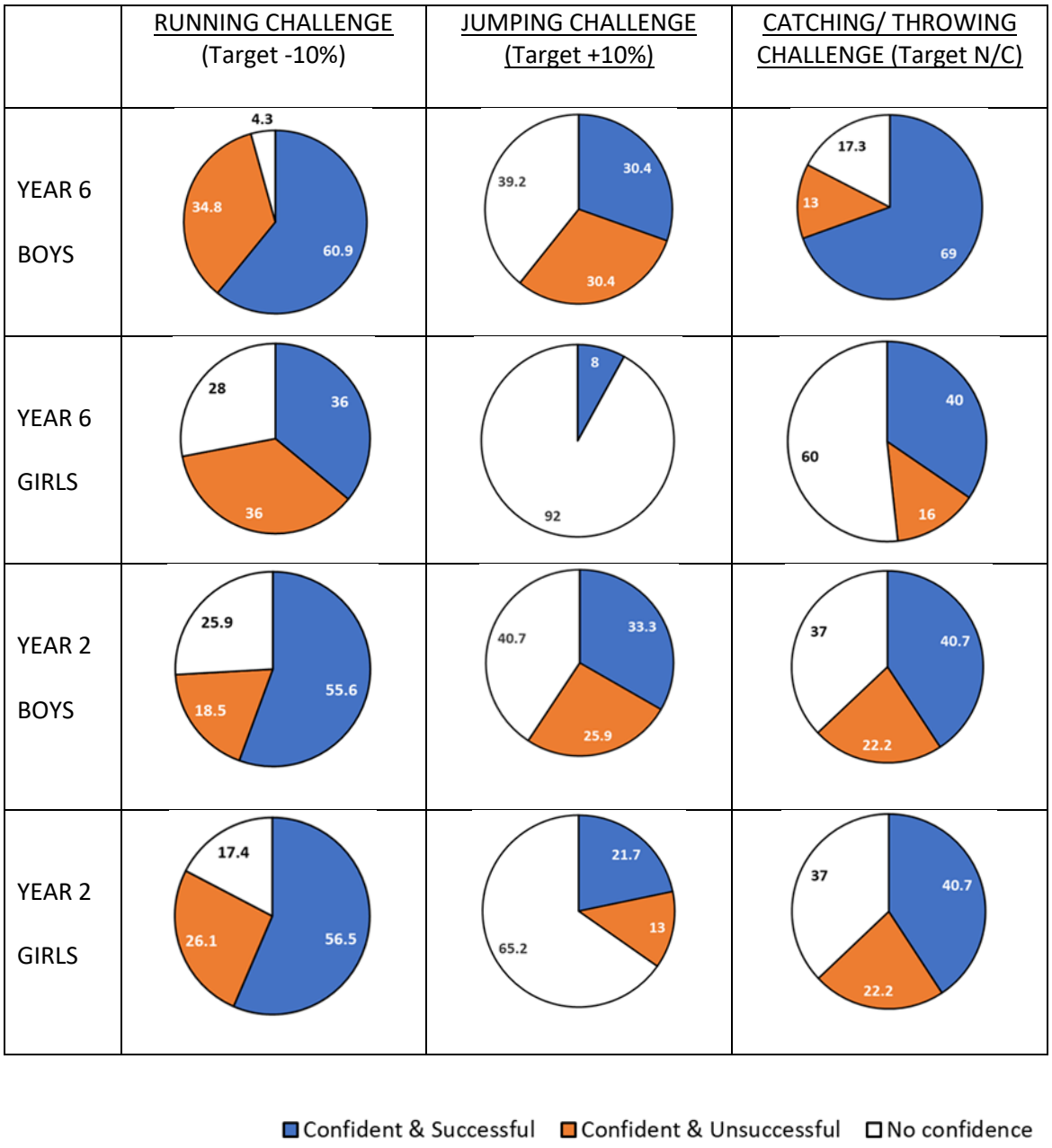


Figure 19: *Percentage number of children for the Competition Group for Confidence and success according to age and gender.*

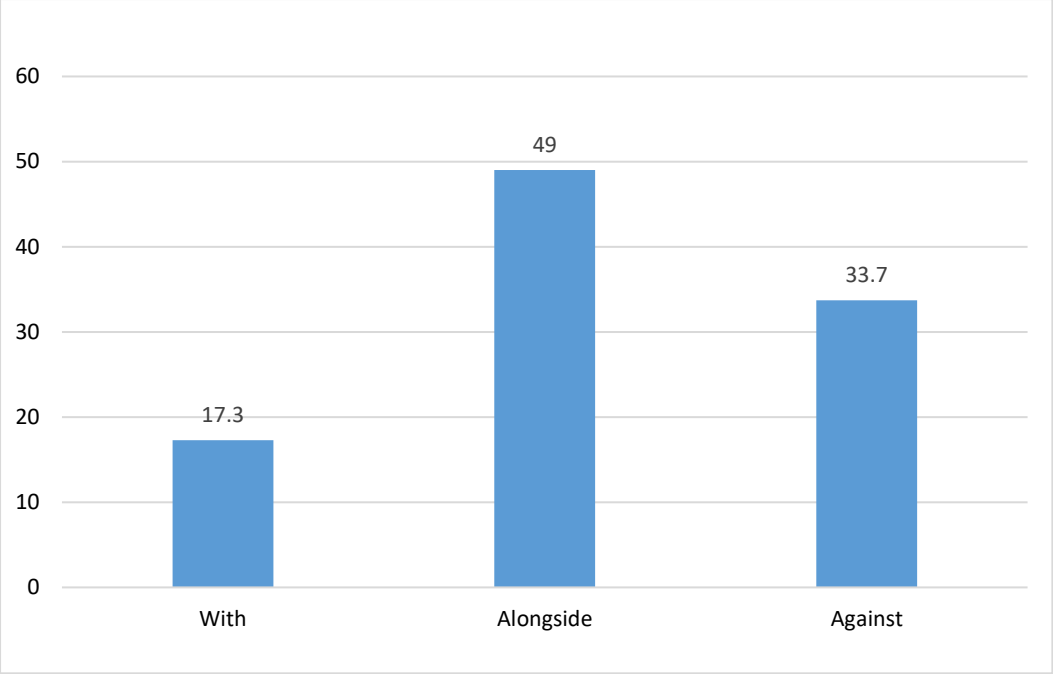


Figure 20: *Percentage number of children who performed best according to the 'type' of competition.*

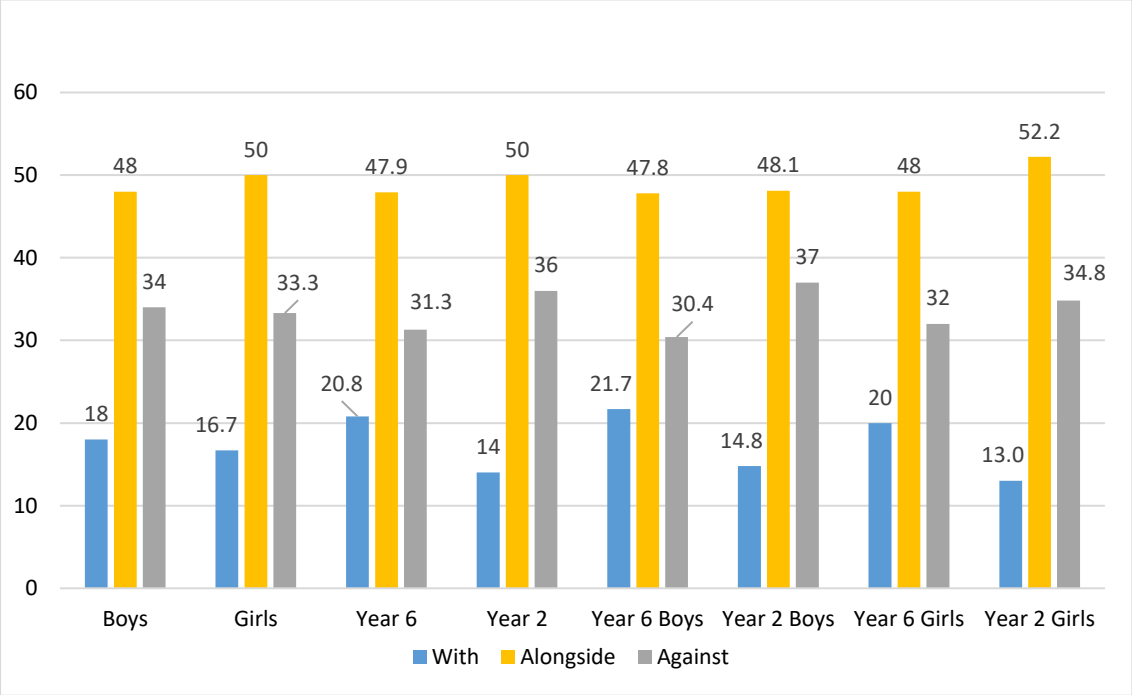


Figure 21*: Percentage number of children who performed best according to the 'type' of competition according* ***to age and gender****.*

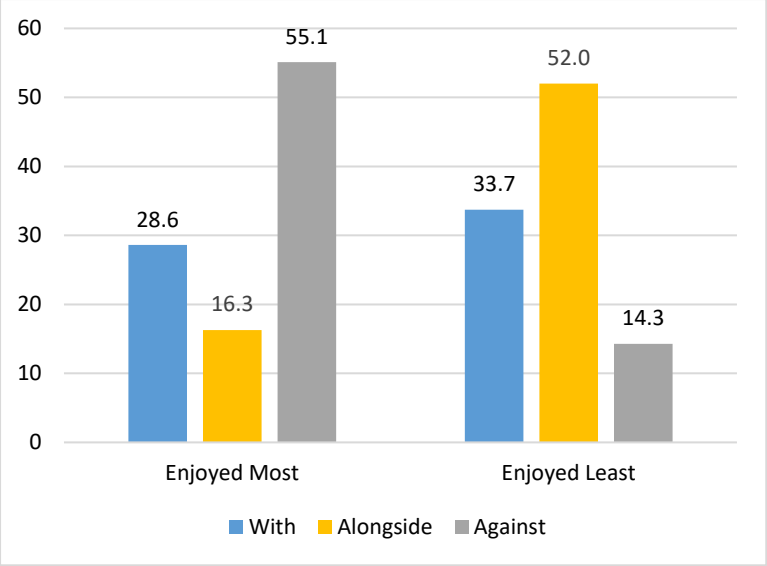


Figure 22: *Percentage number of children and the types of competition most and least enjoyed.*

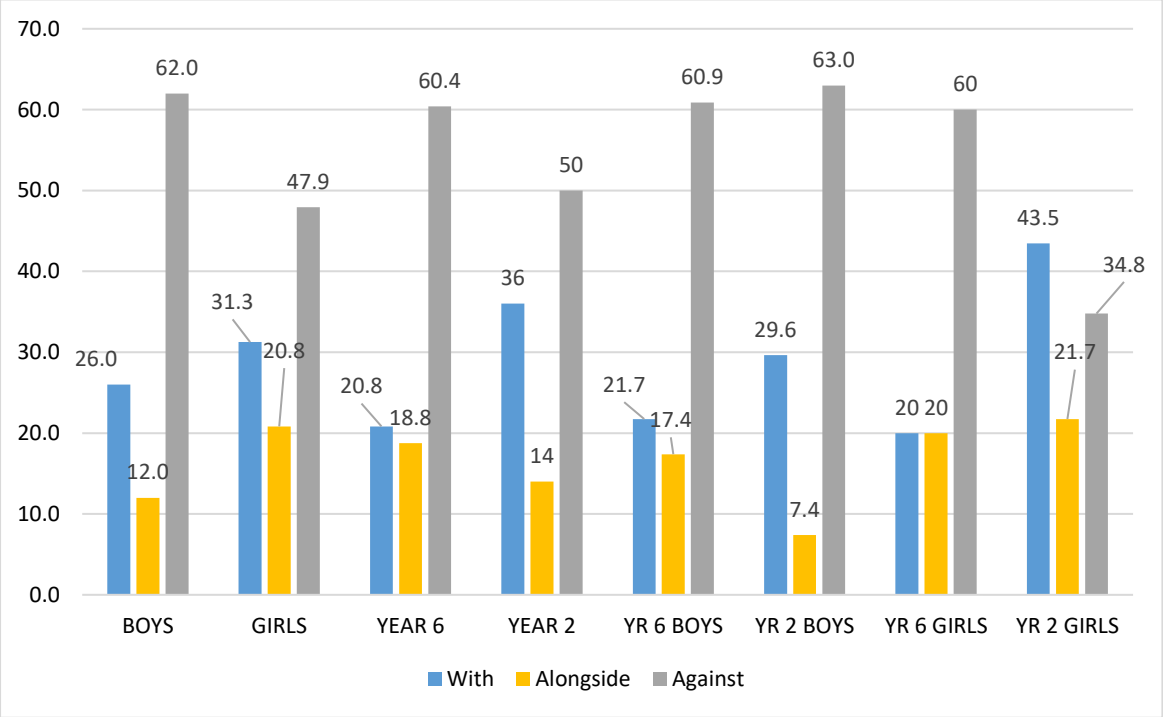


Figure 23: *Percentage number of children and the types of competition **most** enjoyed, according to age and gender.*

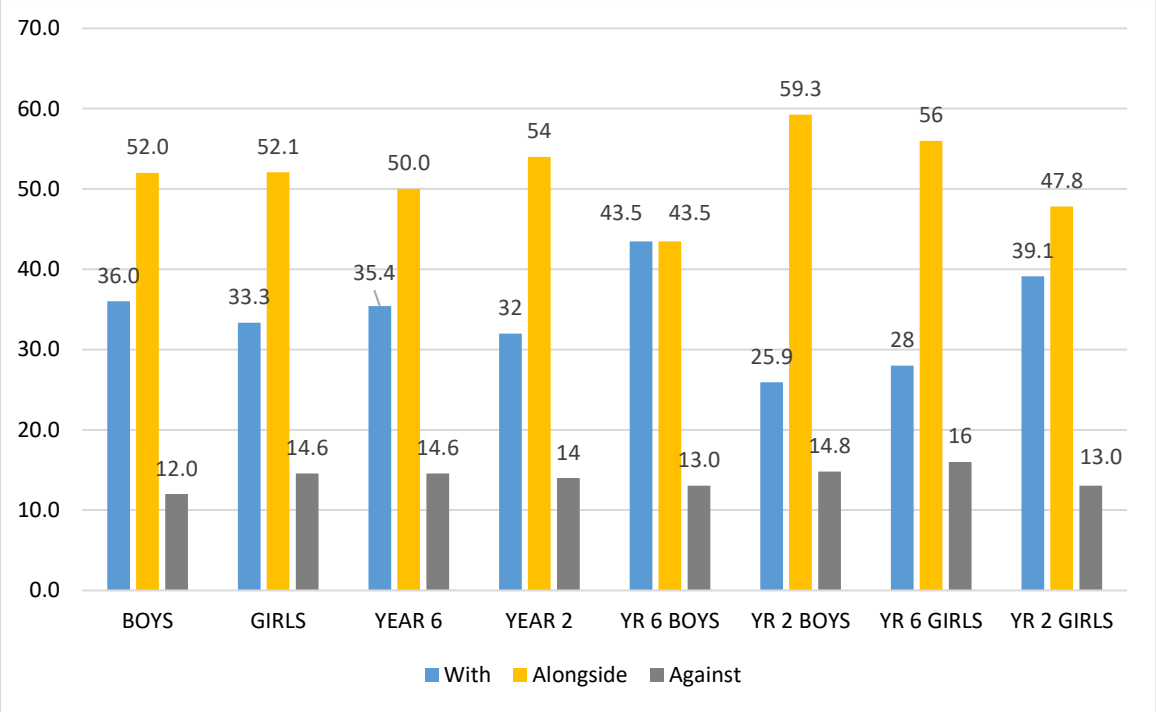


Figure 24: *Percentage number of children and the types of competition **least** enjoyed, according to age and gender.*

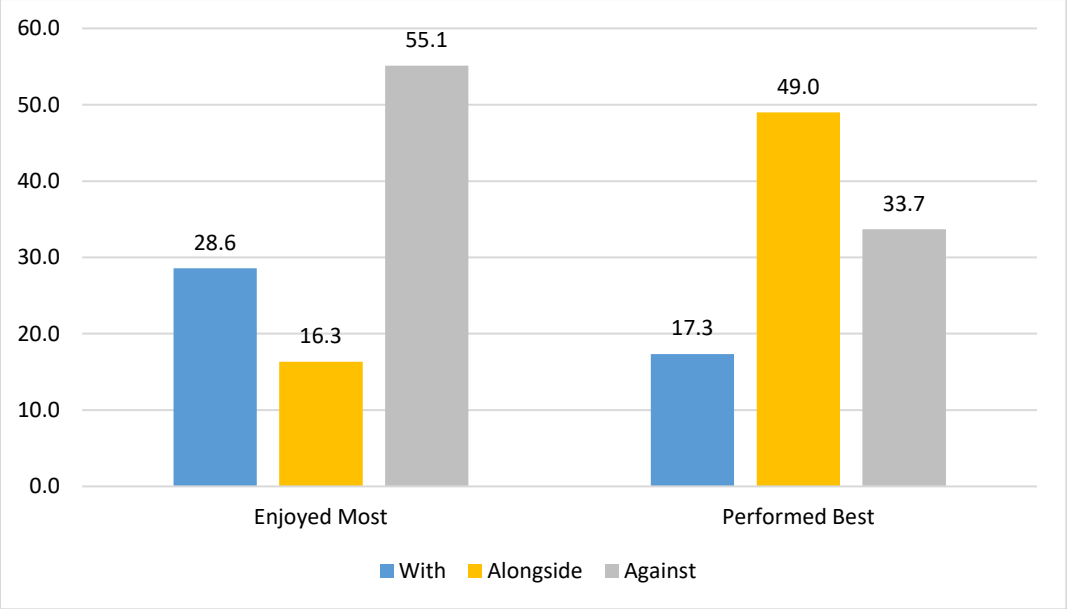


Figure 25: *Percentage number of children and comparison between favourite type of competition and the type of competition they performed best in.*

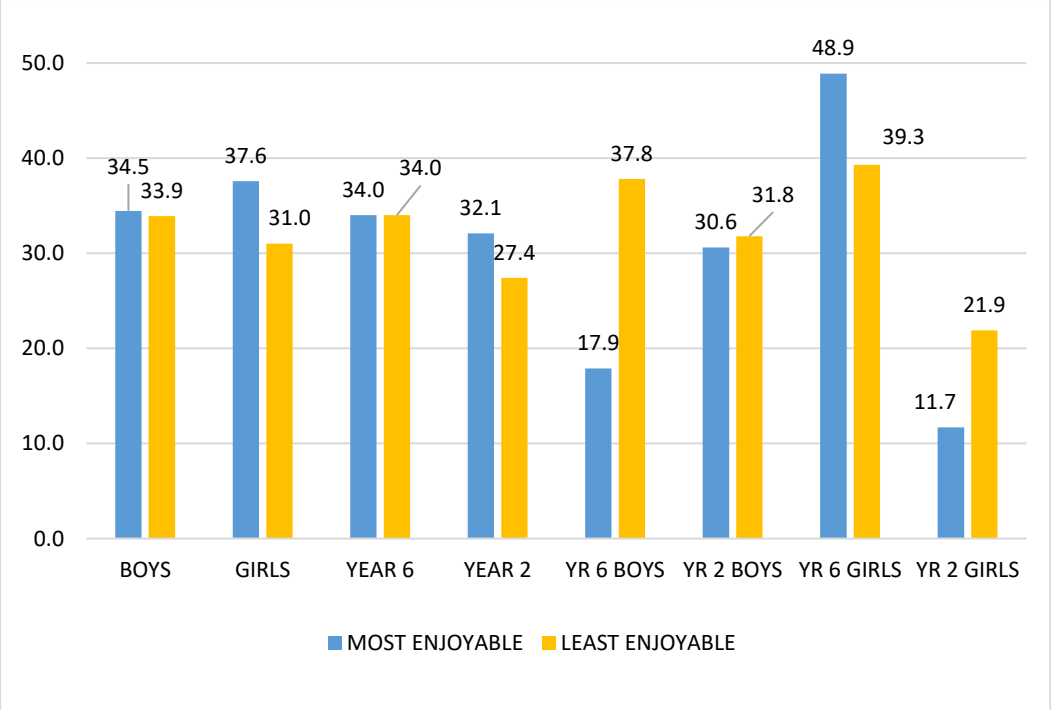


Figure 26: *Percentage number of children who achieved their best time in the type of competition they either enjoyed most or least.*

Appendix 8: Gatekeeper consent and guidance letter

Dear [PE Coordinator],

Many thanks for speaking with me last week; I wanted to summarise what we discussed in writing and I hope you are able to complete the consent form below in order for me to proceed with my research.

I am currently undertaking a Masters by Research in Physical Education and Physical Activity and for my research I am investigating the different ways in which competition can be used within PE lessons to develop greater confidence, competence and enjoyment amongst the young people taking part. Thank you for allowing the school, and in particular the children in Year 2 and Year 6 to be part of my physical activity research. As we discussed, this would entail me coming into the school on two separate occasions when the groups have their timetabled PE lessons. During those times I will ask the children to complete some simple physical activity challenges as part of a series different competitive situations, (working in isolation, alongside others and as part of a team). I aim to collect the raw scores to gauge their progress, as well as asking each child to complete a simple questionnaire to gauge their levels of enjoyment and confidence after session two.

The chosen activities will not require the children to exert themselves or take part in any activities beyond what they would be expected to typically do within their normal lessons. All children, however, WILL be expected to wear their normal PE kit (as per school policy) in order to participate in the study. All scores and results from the research will be anonymised and no child's name will be used within the study. Once the research is completed a final copy of the report will be presented to the school and you are welcome to access a copy.

If you have any questions or concerns, please don't hesitate to reply to this email or give me a call on: 01227 923284. Otherwise, I would be grateful if you could please complete and return the below slip to agree to your school and the children participating in this research. Once I have received this consent form I will contact you to arrange to come in to explain the logistics of the afternoon in more detail.

I am grateful for your help,

Kind regards,

Neil

Please complete and return the below slip

……

I …….…… (PE Coordinator) give permission for pupils in Year 2 and Year 6 to participate in the physical activity research.

Signed…… (PE Coordinator's signature)

Appendix 9: Parents guidance letter

Dear Parents,

My name is Neil Castle and I am Senior Lecturer in Physical Education and School Sport in the Faculty of Education at Canterbury Christ Church University. I am currently undertaking a Masters by Research in Physical Education and Physical Activity and for my research I am investigating the different ways in which physical activity challenges and competitions can be used within PE lessons to develop greater confidence, competence and enjoyment amongst the children taking part.

Your child's class have been chosen to be part of my physical activity and as such, I hope to visit the school over the coming term to deliver some activity sessions within their regular PE lessons. During that time, I will ask the children to complete some simple running, jumping and catching/throwing activities as part of a series different competitive situations, (working in isolation, alongside others and as part of a team). At the end of the second session the children will evaluate how they feel in terms enjoyment and preferences in a short questionnaire.

The research will take place as part of your child's regularly timetabled PE lesson and will not require to exert themselves or take part in any activities beyond what they would be expected to typically do within their normal lessons. I'm looking at the children's responses to way in which the competitive situations are set up and delivered, with a focus on how these could be taught in the future.

All children, however, WILL be expected to wear their normal PE kit (as per school policy) in order to participate in the study. All scores and results collected for the research will be anonymised and no child's name will be used within the study. Once the research is completed a final copy of the report will be presented to the school and you are welcome to access a copy. Please note that if you would do not wish your child's results to be included in this research please could you either let myself or your PE Coordinator know and we will ensure that the results are removed. Likewise, children are not required to complete the questionnaire at the end of session two if they (or you) do not wish them to do so.

If you have any questions about the research or the activities that the children will be taking part in, please don't hesitate to call me on 01227 923284 or send me an email on neil.castle@cantebrury.ac.uk Alternatively please contact your school PE Coordinator as they have bene fully versed on the research and will be involved in delivering the sessions.

Kind regards,

Neil Castle

Appendix 10: Child assent script

Consent form – Child assent / information form (to be read to the child)

My name is Mr Castle and I came here today from Canterbury Christ Church University where I am doing some research on PE and physical activity. Your head teacher has given permission for you all to be part of the research to measure how well you perform in some simple activities that we are about to show you.

What I am going to do is ask you all to complete a number of different physical activity challenges and competitions during your PE lessons. I ask that you all listen carefully when the activities are explained, and that you watch the demonstrations so that you know exactly what you need to do. Then I simply ask that you try your very hardest to complete the challenges to the best of your ability. I will collect the scores from each of the activities and I will then come back on another occasion in a couple of weeks' time to repeat similar sessions.

Finally, at the end of the second session I will ask you to complete a very simple set of questions so that I can get a better understanding about how you feel when you take part in the different activities. This will take us about 5 minutes at the end of the session and we will talk through each question to make sure you understand. You do not have to complete the questionnaire if you would rather not.

By agreeing, it means that you have understood that I will be using some of the results from your efforts today within my University research. (However we won't use anybody's name). This research is designed to help teachers understand more about how you learn and how they can improve the way they teach. Your teachers will not be able to see your individual scores but they will be given a chance to read my research report once it is completed. However, if you do not want your scores to be included in the research, please let myself or one of your teachers know and we will remove them from our notes. (You must be wearing your full (normal) PE kit to take part in the activities).

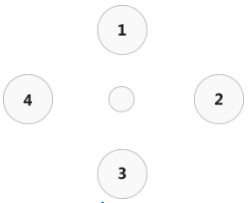
The PE Coordinator will also sign below to act as a witness to show that I have read the above to you and you have understood what I have said.

……. PE Coordinator's signature

Appendix 11a: FMS Physical Activity Challenges (Year 2)

	YEAR 2
Throwing & Catching	Two handed bounce and catch Using 2 hands and a medium sized ball, bounce the ball on the floor and catch the ball whilst standing on one spot as many times as you can (throw/catch doesn't count if you don't catch the ball with two hands) (1 min) https://www.youtube.com/watch?v=cOVT6isXCCA
Jumping	Star Jump Challenge Start with legs together and arms by your side then jump so both legs and arms go out sideways together (making the shape of a star) before jumping back to your starting shape again, see how many star jumps you can do (1 min) https://www.youtube.com/watch?v=S2vuaMEIhhU
Agility Run	Shuttle Running Challenge Run between 2 cones / lines set 6 metres apart, each completed length earns 1 point. (1 min)

Appendix 11b: FMS Physical Activity Challenges (Year 6)

	YEAR 6
Throwing & Catching	Alternate hand throw and catch challenge Stand 1.5 metres from the wall, throw a small ball (i.e. tennis ball) against the wall with your right hand and catch it in your left and then throw with the left and catch it with the right, and so on. (2 min) https://www.youtube.com/watch?v=I_iSdaWyaxQ
Jumping	Two footed bench hop challenge Using a standard bench or chair, start with both hands holding onto the bench and both legs to the left hand side. See how many two footed jumps over the bench/chair you can do in 2 minutes. https://www.youtube.com/watch?v=p33DxQ1gKPw
Agility Run	Star Running Challenge Run from the centre cone to each numbered cone/spot (1.5 metres) and back again in sequence (centre spot to 1 and back, centre spot to 2 and back, and so on). (2 min)  https://www.youtube.com/watch?v=vVPvZp2nsdE

Appendix 12: Post session two questionnaire

Canterbury Christ Church University

1) How do you feel after today's lesson? (Put a line under which face is most like you)

2) Which activity did you enjoy the most: (Put a line under which activity you enjoyed most)

Running: 	Jumping: 	Throwing and Catching: 
Why did you enjoy this activity the most?		

3) Which activity did you enjoy least: (Put a line under which activity you enjoyed the least)

Running: 	Jumping: 	Throwing and Catching: 
Why did you enjoy this activity the least?		

4) Which activity did you feel you performed best in: (Put a line under which activity you think you performed the best in)

Running: 	Jumping: 	Throwing and Catching: 
Why did you think you performed best in this activity?		

5) Which activity did you enjoy the most: (Put a line under which activity you enjoyed most)

Team Relay:	Beat your Best:	1vs1 Duels:
		
Why did you enjoy this activity the most?		

6) Which activity did you enjoy least: (Put a line under which activity you enjoyed the least)

Team Relay:	Beat your Best:	1vs1 Duels:
		
Why did you enjoy this activity the least?		

7) Which activity did you feel you performed best in: (Put a line under which activity you think you performed the best in)

Team Relay:	Beat your Best:	1vs1 Duels:
		
Why did you think you performed best in this activity?		

(Children in the non-competition group were only asked to complete page 1 of the questionnaire as they did not take part in different types of cup-stacking activities).